



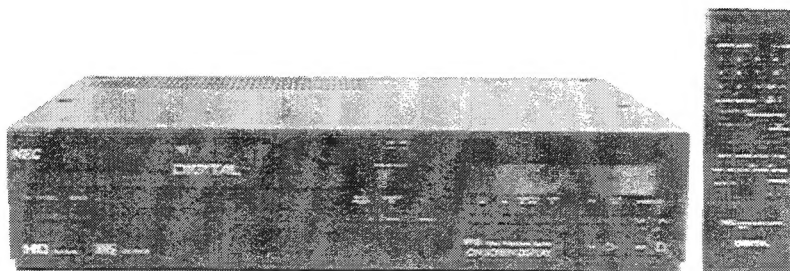
**DIGITAL
MODEL DX-1000G**

COLOR VIDEO CASSETTE RECORDER **SERVICE MANUAL**

PARTS NO. 549-91-0408



**Better Service
Better Reputation
Better Profit**



SPECIFICATIONS

| | | | |
|------------------------|--|-----------------------|--|
| Format | : VHS PAL standard | Video | |
| Recording system | : Rotary, slant azimuth two-head helical scanning system | Input | : 0.5 to 2.0 Vp-p, 75 ohms unbalanced |
| Video signal system | : PAL colour and CCIR monochrome signal, 625 lines. | Output | : 1.0 ± 0.1 Vp-p, 75 ohms unbalanced |
| Tape width | : 12.65 mm (1/2 inch) | S/N ratio | : More than 43 dB |
| Tape speed | : 23.39 mm/sec. | Horizontal resolution | : 250 lines with the SHARPNESS control at center position. |
| Maximum recording time | : 240 min. with E-240 video cassette | Audio | |
| Temperature operating | : 5°C to 40°C | Input | : -8 dB, 47 kohms unbalanced |
| storage | : -20°C to 60°C | Output | : -6dB, high impedance load |
| Channel coverage | : VHF BAND VL: 47 - 118 MHz VHF BAND VH: 118 - 300 MHz UHF BAND U: 470 - 862 MHz | S/N ratio | : More than 40 dB |
| Antenna output | : UHF channels 30-39 (adjustable) 75 ohms unbalanced | Frequency range | : 70 Hz to 10,000 Hz |
| Power consumption | : 40 Watts | Timer | : Maximum 1-year/4-event |
| Power requirement | : AC 220V ~ 50 Hz | Dimensions | : 430mm (W) × 99mm (H) × 175mm (D) |
| | | Weight | : 7.8 kg |
| | | Provided accessories | : Remote control unit Antenna cable Size R6 batteries (2 pieces) |

Design and specifications are subject to change without notice

NEC Corporation
TOKYO, JAPAN

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SECTION 1

Important Safety Precautions

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the \triangle symbol and shaded (▨) parts are critical for safety. Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulation sheets for transistors

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering. (Fig. 1)

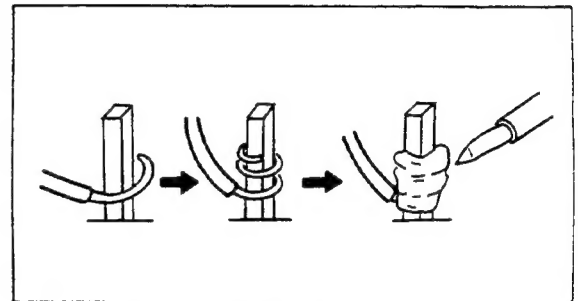


Fig. 1

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it. (Fig.2)

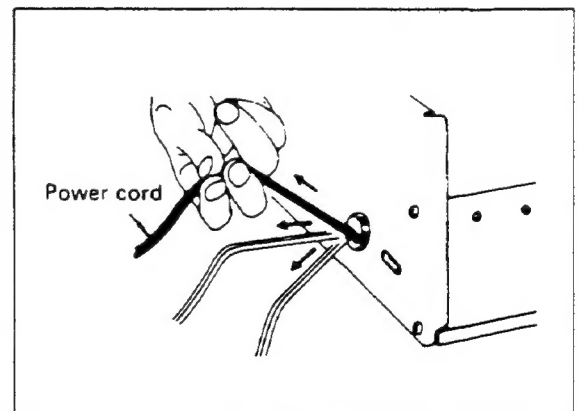


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)

In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) See table below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d),(d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

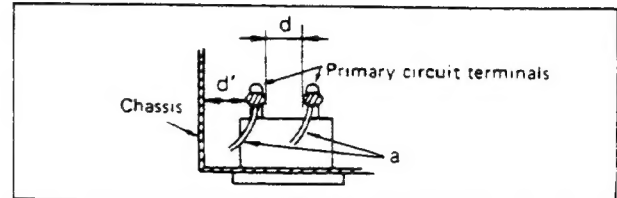


Fig. 8

Table 1: Ratings for selected areas

| AC Line Voltage | Region | Insulation Resistance | Dielectric Strength | Clearance Distance(d),(d') |
|--------------------------------|---------------------|--|---------------------|---|
| 100 V | Japan | $\geq 1 \text{ M}\Omega/500 \text{ V DC}$ | 1 kV 1 minute | $\geq 3 \text{ mm}$ |
| 110 to 130 V | USA & Canada | --- | 900 V 1 minute | $\geq 3.2 \text{ mm}$ |
| * 110 to 130 V 200 to 240 V | Europe Australia | $\geq 10 \text{ M}\Omega/500 \text{ V DC}$ | 4 kV 1 minute | $\geq 6 \text{ mm (d)}$ $\geq 8 \text{ mm (d')}$ (a Power cord) |

* Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

4. Leakage current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

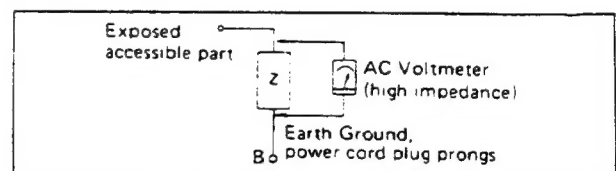


Fig. 9

Table 2: Leakage current ratings for selected areas

| AC Line Voltage | Region | Load Z | Leakage Current (i) | Earth Ground (B) to: |
|------------------------------|---------------------|---|--|--------------------------|
| 100 V | Japan | $1 \text{ k}\Omega$ | $i \leq 1 \text{ m A rms}$ | Exposed accessible parts |
| 110 to 130 V | USA & Canada | $0.15 \mu\text{F}$ $1.5 \text{ k}\Omega$ | $i \leq 0.5 \text{ m A rms}$ | Exposed accessible parts |
| 110 to 130 V 200 to 240 V | Europe Australia | $2 \text{ k}\Omega$ | $i \leq 0.7 \text{ m A peak}$ $i \leq 2 \text{ m A dc}$ | Antenna earth terminals |
| | | $50 \text{ k}\Omega$ | $i \leq 0.7 \text{ m A peak}$ $i \leq 2 \text{ m A dc}$ | Other terminals |

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

IMPORTANT: It is permissible to record television programmes only in the event that third party copyrights and other rights are not violated.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION

Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

MAINS POWER SWITCH

The mains switch is located on the rear connector panel. Setting this switch to OFF removes all applied power from the set including the timer clock. Switching on or off the recorder section is performed with the secondary power switch, labelled OPERATE, on the front panel.

NOTE: The rating plate and the safety caution are on the rear of the unit.

CAUTION: When you are not using the VCR for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

This instruction manual is important to you. Please read it. In a brief, concise manner, it shows exactly how to connect, operate and adjust the VCR for best performance. It can save you money. It shows you simple things to do and check before you call for help..so you may save the cost of unnecessary service.



Only cassettes marked "VHS" can be used with this video cassette recorder.

VHS High Quality technology is incorporated into VCR's marked "HQ". This unit is compatible with conventional VHS VCR's.

GENERAL NOTES:

- This recorder is designed to operate in a horizontal position.
- Do not install the recorder in a location near heat sources, such as radiators, air ducts, etc., or in a place subjects to direct sunlight, excessive dust, mechanical vibration or shocks.
- Allow adequate air circulation to prevent internal heat built-up. Do not place the recorder on surfaces such as rugs, blankets, etc, or near materials such as curtains or drapes, etc., that may block the ventilation holes.
- Keep the recorder and video cassette away from strong magnetic fields.
- After playing a tape, remove the video tape from the VCR if the VCR is not going to be used for an extended length of time.
- Do not transport the recorder with a video cassette in place.
- To disconnect the cord, pull it by the plug. Never pull the cord itself.
- Generally, head cleaning by the user is not required. Should snow or streaks appear in the playback picture after having used the recorder for an extended period of time, consult your nearest NEC dealer.
- Should any liquid or solid object fall into the VCR cabinet, unplug the recorder and have it checked by qualified personnel before operating it any further.
- Save the original shipping carton and packing material; they will come in handy if you ever have to ship your recorder.
- For maximum protection, repack the recorder at it was originally packed at the factory.
- This machine is designed to record and play back the PAL colour and CCIR monochrome video signals.
- Do not place any magnetism emitting device (TV set, etc.) on top of the VCR. Otherwise noise or other screen disturbances may occur.
- Do not place any object heavier than 15 kg on the VCR.

FEATURES

NEC DIGITAL NOISE REDUCTION

This VCR features NEC's Digital Noise Reduction System. Using a technique known as field correlation, video noise is dramatically reduced without loss of detail. In fact, NEC's Digital Noise Reduction system improves the video signal-to-noise ratio up to 9dB!

DIGITAL SPECIAL EFFECTS

NEC's digital technology produces noise-free STOP ACTION (still) without time lag and SLOW MOTION (1/3 normal speed).

DIGITAL PICTURE MEMORY

While viewing a tape or TV program through the VCR's built-in tuner, a live image can be memorized and frozen on the TV screen while the cassette or TV program continues to run in real-time.

STROBE ACTION

Variable Strobe effects are provided for both video playback and on-air TV broadcasts without audio interruption. This exciting feature is a new video effect and not available in conventional VCRs.

1-YEAR/4-EVENT PROGRAMMABLE TIMER

The user can programme the timer so that the VCR will automatically record up to four TV shows in the coming year. An indicator points out errors made during programming, and if a prerecorded tape with a missing safety tab is accidentally inserted, the unit will eject the cassette.

ON SCREEN FUNCTION AND TIMER DISPLAY

When you activate a tape function, such as play, fast-forward or rewind, the corresponding display appears on the TV screen. When programming the timer, a menu showing the timer contents is displayed, making remote programming easy.

MULTI FUNCTION DISPLAY

You can confirm the operating status of the VCR at a glance thanks to a fluorescent indicator that graphically shows the engaged mode. Modes shown are: PLAY, RECORDING, PAUSE/STILL, FAST FORWARD, REWIND, CUE, REVIEW and STOP. Other indications shown are CASSETTE IN, NO TAB, 4-DIGIT COUNTER.

SEGMENT RECORDING

Segment recording allows the VCR timer to automatically stop recording and shut power off. Each touch of the SEGMENT REC button will add 30 minutes worth of recording time, up to a maximum of 5 hours. In addition, the setting time can be set to one minute segments by pressing the CHANNEL/SET (V)/(^) buttons.

JET SEARCH PROVIDES FAST LOCATION OF SCENE

The picture search function runs the tape at 4 times the speed of the normal playback, making it easy to locate a specific scene. If you want to search for a particular scene faster, then you should press the Fast Forward or Rewind button a second time. When you do, the JET SEARCH function will run the tape, at 8 times normal playback.

55 FUNCTION UNIFIED REMOTE CONTROL UNIT OPERATES BOTH VCR AND TV.

The unified infrared remote control supplied with the DX-1000B is capable of operating both the VCR and compatible NEC TVs. This remote control unit can control basic VCR/TV functions as well as timer programming functions.

HQ (HIGH QUALITY) VIDEO SYSTEM

The "High Quality" circuit increases the dipping level for peak white by 20%, adding sharpness and ensuring detailed reproduction thanks to the use of a Detail Enhancer Technic.

VOLTAGE SYNTHESIZED TUNER

The built-in tuner covers all VHF and UHF channels. Of all the channels which are tunable, 40 may be conveniently memorized and recalled.

AUTO POWER ON

We have made the VCR as automatic as technically possible. When a tape is inserted, power is automatically switched on.

AUTO PLAYBACK

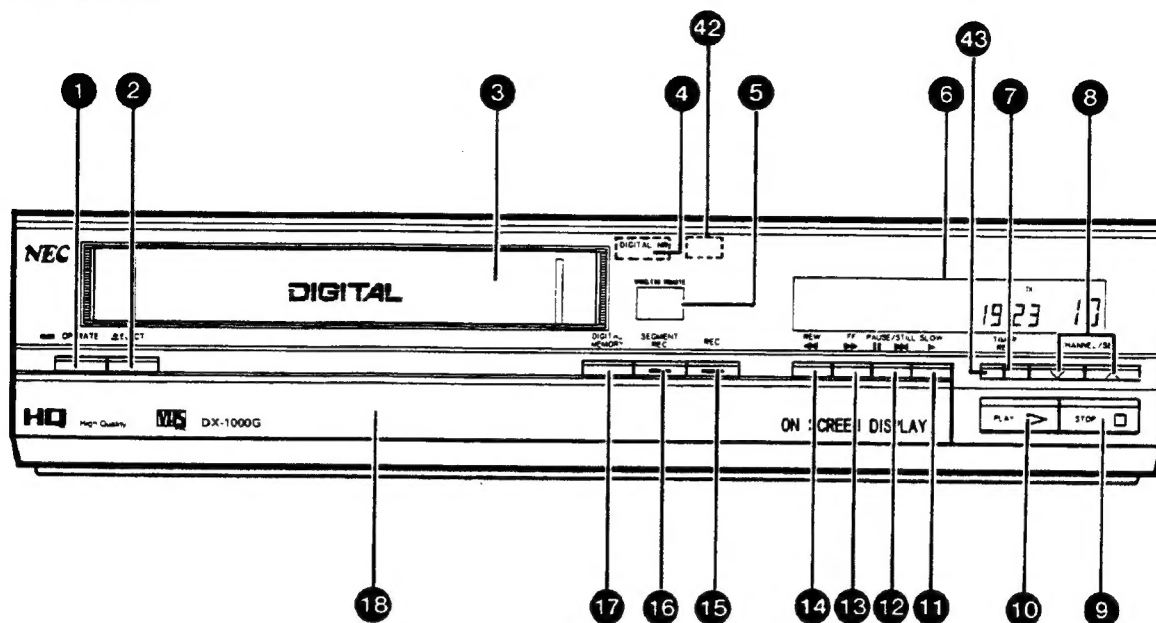
The VCR will begin playback automatically if the video cassette has no safety tab.

POWER OFF EJECT

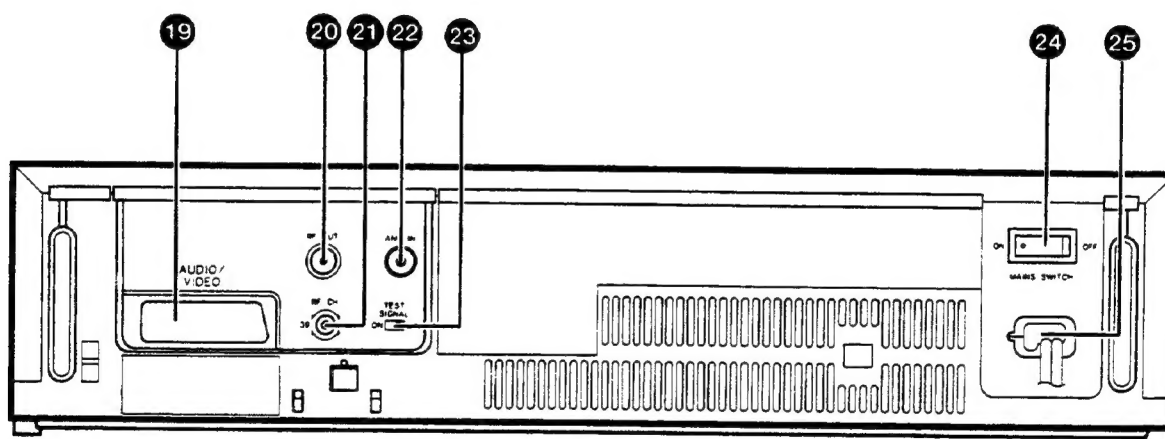
Even if the VCR is turned off, the tape can be removed by pressing the EJECT button.

CONTROLS AND COMPONENTS

FRONT VIEW



REAR VIEW



FRONT VIEW:

1 OPERATE button

This button is used to turn the VCR on and off.

2 EJECT button

Press this button to remove the cassette.

3 Cassette compartment

4 DIGITAL NR indicator

Lights when the DIGITAL NR switch is switched ON.

5 Infrared remote sensor

This sensor is used for receiving infrared signals from the remote control.

6 Display

7 TIMER REC button

This button is used for unattended recording after the timer has been programmed. When this button is on, the timer recording indicator "□" lights in the display. When this light is on, the unit is under the control of the timer and cannot be operated manually.

8 CHANNEL/SET (V)/(^) buttons

Use to select the specific channel which you wish to view or record. Also used during Time Setting or Timer Programming.

9 STOP button

Press this button to stop the tape.

10 PLAY button

Press this button to play back pre-recorded tapes.

11 SLOW button

Press this button to activate slow motion playback.

12 PAUSE/STILL button

A) Use to temporarily stop the tape during recording or playback.

B) Use to view a still picture on the TV screen.

13 FAST FORWARD/CUE button

Press this button to:

A) move the tape forward rapidly.

B) to view a high-speed forward picture (picture search) during playback.

14 REWIND/REVIEW button

Press this button to:

A) rewind tape in reverse rapidly.

B) to view a high-speed reverse picture (picture search) during playback.

15 REC button

Recording is started by pressing this button.

16 SEGMENT REC button

Press this button to set the segment recording timer for simplified timer recording up to 5 hours in 30 minute segments.

17 DIGITAL MEMORY button

When pressed during playback or recording, a stop action picture is displayed, while the tape continues to run in real-time.

When pressed while monitoring a TV program through the VCR's built-in tuner, a still picture is displayed while the TV program continues live.

18 Front Compartment

REAR VIEW:

19 21-pin SCART Connector (AUDIO/VIDEO connector)

A 21-pin Standardised SCART connector for connection to a TV equipped with the same type of connector.

20 RF OUT connector

Connect to the antenna terminal of a TV with the antenna cable (provided).

21 RF converter frequency adjustment screw

22 ANT IN terminal

Connect a TV antenna to this connector.

23 TEST SIGNAL switch

Normally, set this switch to the OFF position.

This switch is used when tuning your TV to the VIDEO CHANNEL

24 MAINS switch

To apply power to the VCR, set this switch to ON. When this switch is set to OFF, the timer clock and the built-in aerial circuit are off. In this condition, the TV connected to this VCR will not be able to properly receive off-air TV programmes. Normally, leave this switch set to ON.

25 Power cord

Connected AC 220 V ~, 50 Hz.

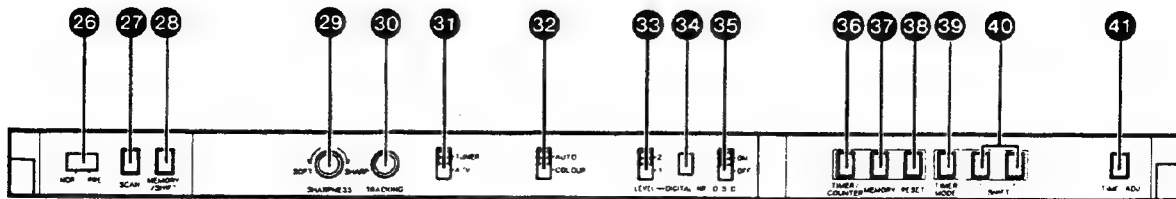
42 VPS signal Indicator

Lights when a VPS signal is received.

43 VPS REC button

This button is used for unattended recording after the timer has been programmed. When this button is on, the timer recording indicator "□" and VPS recording indicator "VPS" light in the display. When these lights are on, the unit is under the control of the VPS timer and cannot be operated manually.

FRONT COMPARTMENT



26 NORMAL/PRESET (NOR./PRE.) switch

This switch is used for Channel presetting.
This switch should usually be set to the NOR. position.

27 SCAN button

This button is used for Channel presetting.
The tuning channel moves to a higher channel by pressing this button.

28 MEMORY/SHIFT button

This button is used for Channel presetting.
This button is pressed to enter a tuned channel into memory.

29 SHARPNESS control

Slide this control to the left (SOFT) to soften the picture, and slide it to the right (SHARP) to sharpen the picture.

30 TRACKING control

Use this control during playback to fine tune the picture and eliminate or reduce noise bars.

31 Input select switch

TUNER: To record signals from the built-in tuner.
A/V: To record signals from a source connected to the SCART connector.

32 AUTO/COLOUR select switch

AUTO: Colour or B/W mode is automatically selected. Set to this position for normal use.
COLOUR: Set to this position when the input or playback video signal is in colour.

33 NR (Noise Reduction) LEVEL control

Determines the amount of digital noise reduction applied to the picture when the DIGITAL NR switch is set to the ON position.

34 DIGITAL NR (Noise Reduction) switch

When switched ON, the digital noise reduction circuit is activated, reducing video noise. Digital noise reduction is not applied when this switch is in the OFF position.

35 ON SCREEN Display (O.S.D) switch

ON: Function display appears On Screen
OFF: On Screen function display does not appear on screen.

36 TIMER/COUNTER button

This button switches the digital display between the timer and tape counter modes.

37 MEMORY (counter) button

Enables you to automatically stop the tape at "0000" during rewind or fast forward.

38 RESET button

In normal operation pressing this button, the tape counter will be reset to "0000". If this button is pressed during timer programming, the re-entered programme will be cleared.

39 TIMER MODE button

Pressing this button changes the information appearing on the display from:
PRESENT TIME to TIMER PROGRAMMING to PRESENT TIME.

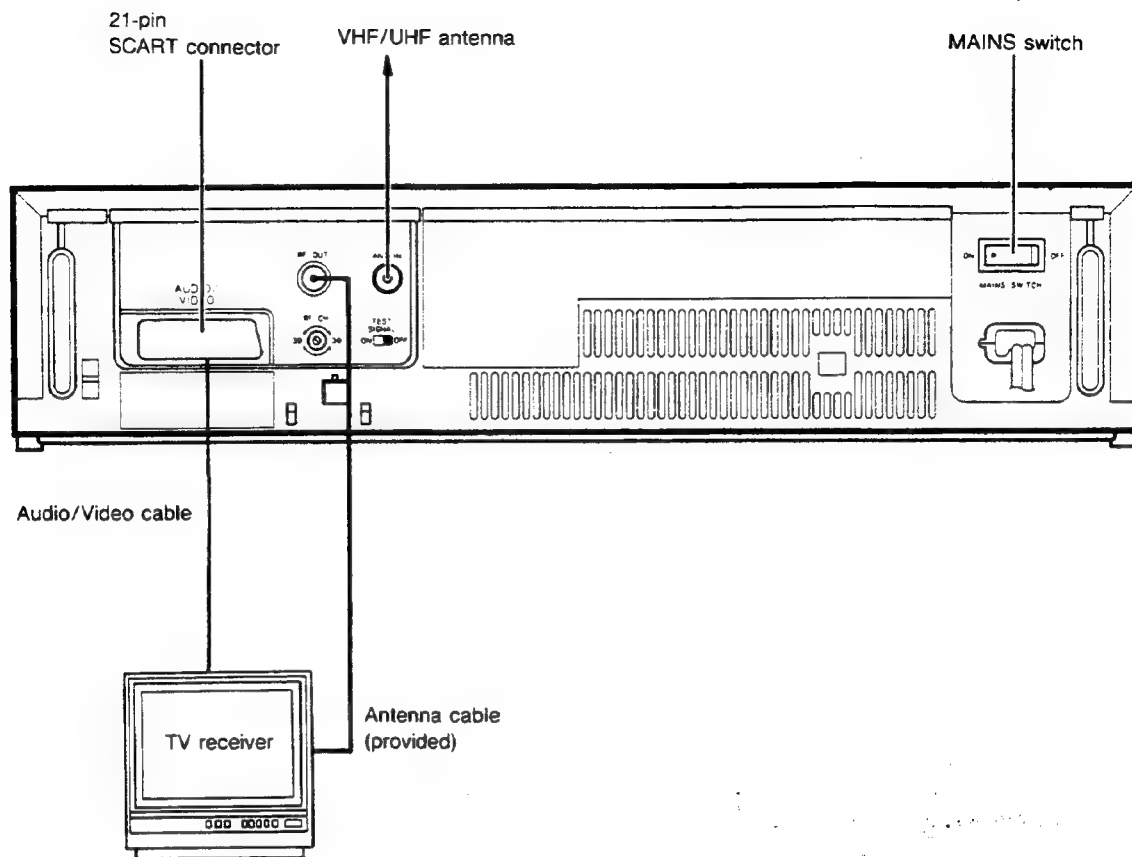
40 SHIFT (-)/(+) buttons

These buttons are used for Time Setting and Timer Programming.

41 TIME ADJUSTMENT (TIME ADJ.) button

This button is used for Time Setting.

ANTENNA CONNECTION



Procedure

1. Remove the antenna cable from the TV receiver and reconnect it to the VCR as illustrated. The VCR is then ready to record off-air programmes.
2. Connect the VCR to the TV using the antenna cable (provided) as illustrated. The TV is then ready to receive TV broadcast programmes as well as accommodate video cassette playback.
3. Connect the 21-pin SCART connector on the rear of the VCR and the SCART connector of the TV set using the Audio/Video cable.

Note:

Even when you are not using the VCR, the rear panel MAINS switch should be set to ON in order to be able to view TV broadcasts with this connection.

For reference

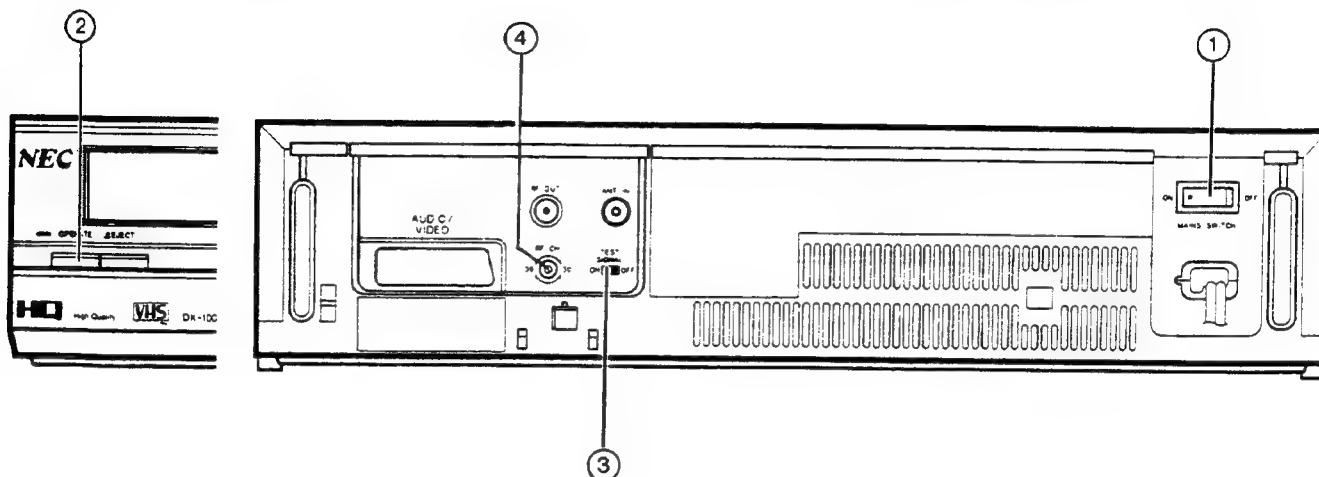
- Previously, when you were using only the TV, broadcast signals went to the TV directly from the antenna. Now, after you have connected the VCR to the TV, broadcast signals enter the VCR directly from the antenna and go to the TV through the VCR.
- In order to transmit entering broadcast signals to the TV, an antenna circuit is built into the VCR. This antenna circuit must be on as long as you are viewing TV programmes even though you are not using the VCR. If the MAINS switch is set to OFF, the VCR's antenna circuit is also switched off. In this state, the connected TV cannot properly receive off-air TV programmes and a good picture is not obtained. Therefore, normally, keep the MAINS switch set to ON.

VIDEO CHANNEL SETTING

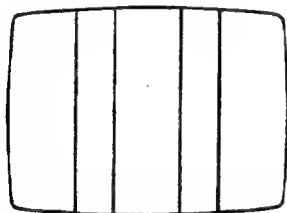
Resetting the RF converter output channel

The built-in RF converter permits playback of video and audio recordings through a TV. The signals from the RF converter are viewed through a vacant channel not used for TV broadcasting in your viewing area.

The converter channel of all units is set to UHF channel 36 prior to shipment. Setting your TV receiver to UHF channel 36 may provide video playback. However, to obtain the best possible reproduction on your TV receiver, accurate adjustment of the RF converter output channel is required.



1. Set the MAINS switch ① to ON and press the OPERATE button ② on the front panel to turn on the VCR. Turn on the TV.
2. Set the TEST SIGNAL switch ③ to ON.
3. Adjust the TV in the vicinity of UHF channel 36 until you bring in the two white signal bars on the screen as illustrated. This setting is now the VIDEO CHANNEL of the TV to which the VCR is connected.
4. Set the TEST SIGNAL switch ③ to OFF.



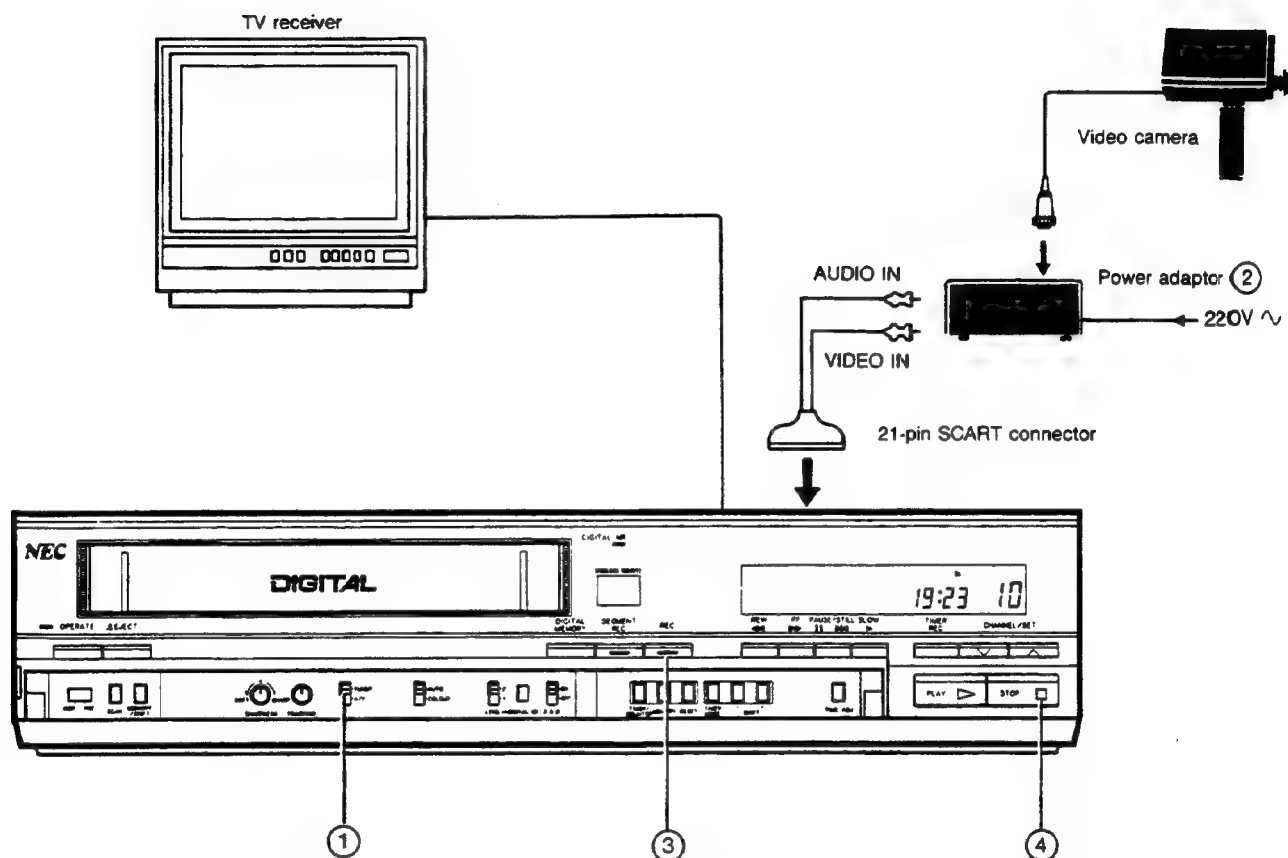
Notes:

- When you adjust the TV to channel 36 for video playback, if some interference noise is seen on the screen because of broadcasts on neighbouring channels or if preset broadcasts are affected in terms of picture quality, it is necessary to adjust the RF converter output more accurately the RF converter output.
- For this purpose, insert a screwdriver into the hole on the rear of the VCR and re-adjust the RF converter frequency adjustment screw ④ in minute steps. Then tune the TV once again until a clear picture is obtained.
This adjustment requires extreme precision and must be done with the utmost care. We recommend that you consult your NEC dealer for making this adjustment.
- Be sure to set the TEST SIGNAL switch ③ to OFF after VIDEO CHANNEL tuning has been completed.
- If a prerecorded VHS cassette is available, TV adjustment for VIDEO CHANNEL setting is also possible using it to obtain a playback picture. Insert the cassette and operate the VCR for playing back the cassette. Then tune the TV to obtain clear picture and sound while monitoring the playback picture on the TV screen.
- If the TV is not provided with an AFC (Automatic Frequency Control) circuit, perform fine tuning of the TV receiver when you are actually viewing playback of video cassettes.

CAMERA RECORDING

Preparation

- Connect a video camera according to the illustration below.
- Insert a video cassette with the safety tab intact.
- Turn the TV on and adjust the channel to the video channel.



1. Set the input select switch ① to A/V.
 2. Turn the power adaptor on ② and make adjustments on the video camera. (Please read the owner's operation manual of the camera.)
 3. Press the REC button ③.
 4. Press the STOP button ④ to stop recording.
- When reverting back to recording the TV programme, set the input select switch ① to TUNER.

BEFORE REQUESTING SERVICE

Before requesting service, check the following items. It can save you time and money.

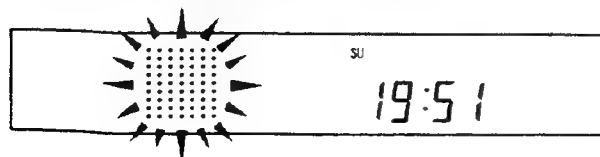
| PROBLEM | CHECK | CORRECTION |
|---|--|---|
| No Power | AC cord plugged in? MAINS switch on? Timer recording set? | Plug in AC cord. Turn on MAINS switch. Set timer recording off. |
| Video Cassette cannot be inserted. | A video cassette already in? A video cassette inserted correctly? | Replace it. ● Insert the video cassette with the window side up and the safety tab facing you. |
| TV Programmes cannot be recorded. | Connection between VCR and antenna correct? Receiving Channel of VCR tuned correctly? Safety tab broken? Input select switch position | Fix connections Adjust to desired channel. If broken, fix adhesive tape over the hole. Set to TUNER. |
| Timer recording cannot be performed. | Recording start/stop time set correctly? TIMER REC button on? | Set correct times. Press TIMER REC button on. ● In the event of a power interruption, the timer will lose its preset time memory and timer recording will not be performed. |
| No playback picture | TV tuned to VCR's RF output channel? | Tune TV to VCR's RF output channel (30 to 39). |
| Playback picture is noisy or contains streaks. | TRACKING in correct position? | Adjust TRACKING control. |
| Top of the playback picture waves back and forth excessively. | | Adjust horizontal hold control on TV. |

If A Power Failure Occurs ...

- There are two cases; (a): if a operate failure continues for less than approx. 10 minutes, the display disappears but the clock continues operation. When operate resumes, the correct current time will reappear in the display. The contents of timer programming remains in effect. Also, (b): If a operate failure continues for longer than 10 minutes, the display will return to "0:00", "TH" (Thursday), and blink off and on when power returns. In this case, reset the clock and timer programming again, referring to pages 14 and 21 to 24.

When Tape Movement Stops Automatically ...

- If trouble occurs during tape movement or to the mechanism inside the VCR, a safety device works to stop the operation of the VCR automatically. This prevents damage to the VCR and the tape. If this occurs the ALARM indicator will be shown in the display and the power will be turned off automatically.



(STOP indicator is flashing.)

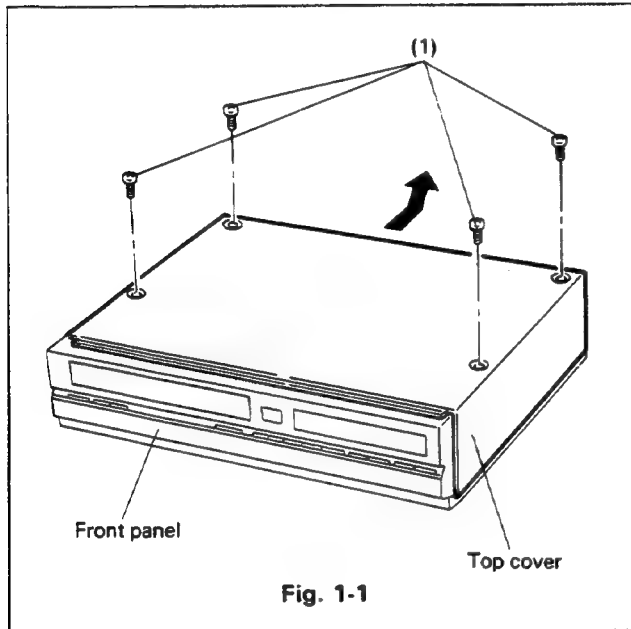
- Pressing the OPERATE button will turn the VCR on.
- If moisture (dew) is present on the head drum assembly inside the VCR, the VCR cannot be operated. Remove the video cassette, and operate again after a few hours. Leave the power cord plugged in and the MAIN switch on for the anti-dew function to take place.
- This VCR has a HUMIDITY REDUCTION SYSTEM, which operates only when the power cord is plugged into an electrical outlet and the VCR is turned off. It is suggested that the power cord be kept connected to an electrical outlet during winter and other months of HIGH HUMIDITY to protect the device from MOISTURE, unless you will be away for a long period of time.

SECTION 2 DISASSEMBLY

1. REMOVING THE CASE

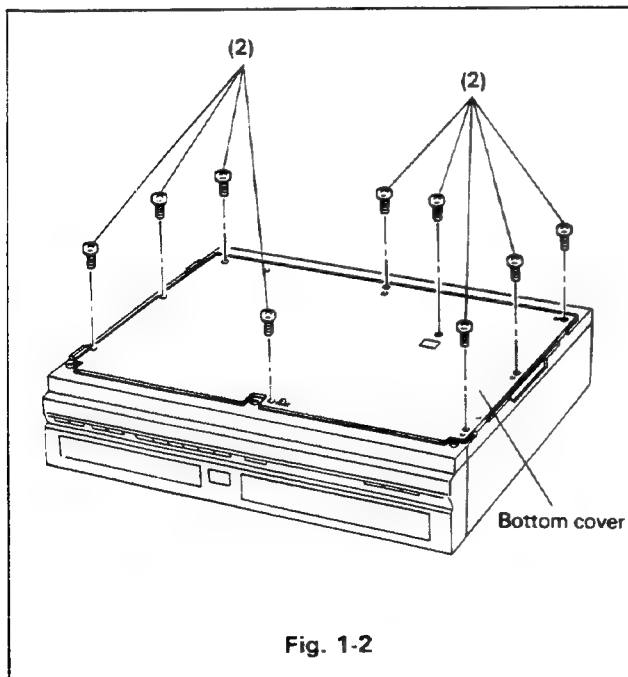
1-1. TOP COVER (Figure 1-1)

- (1) Remove four screws (1) on the top cover.
- (2) Lift the rear of the top cover to release it in the direction of the arrow from the front panel.



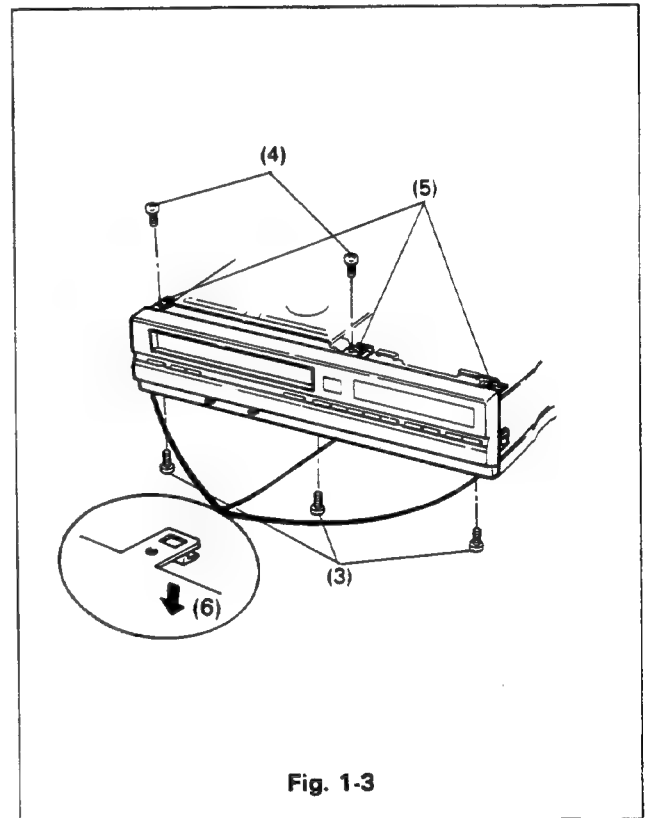
1-2. BOTTOM COVER (Figure 1-2)

- (1) Remove nine screws (2) on the bottom cover.



1-3. FRONT PANEL (Figure 1-3)

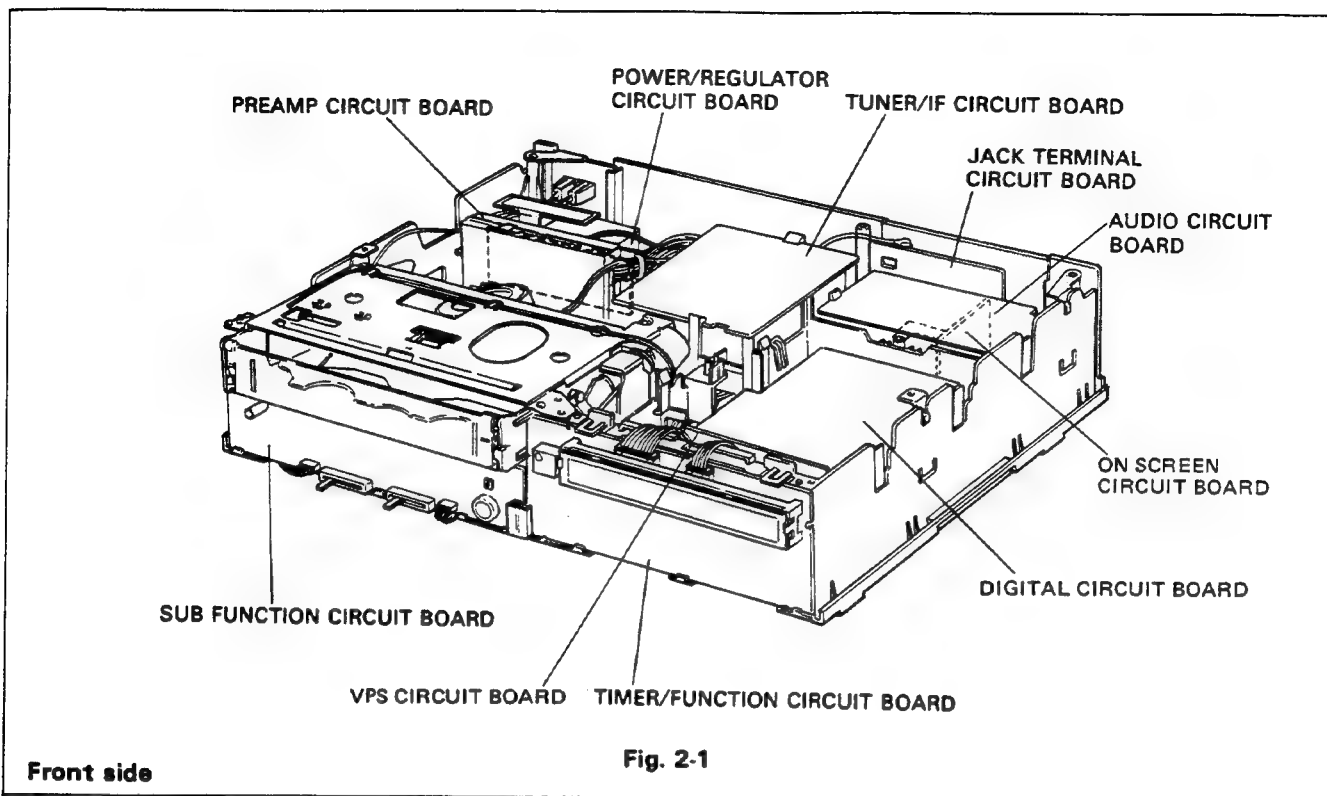
- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove three screws (3) on the bottom of the front panel.
- (3) Remove two screws (4) on the top of the front panel.
- (4) Release tabs (5).
- (5) Release tabs (6), and tilt the front panel forward to remove.



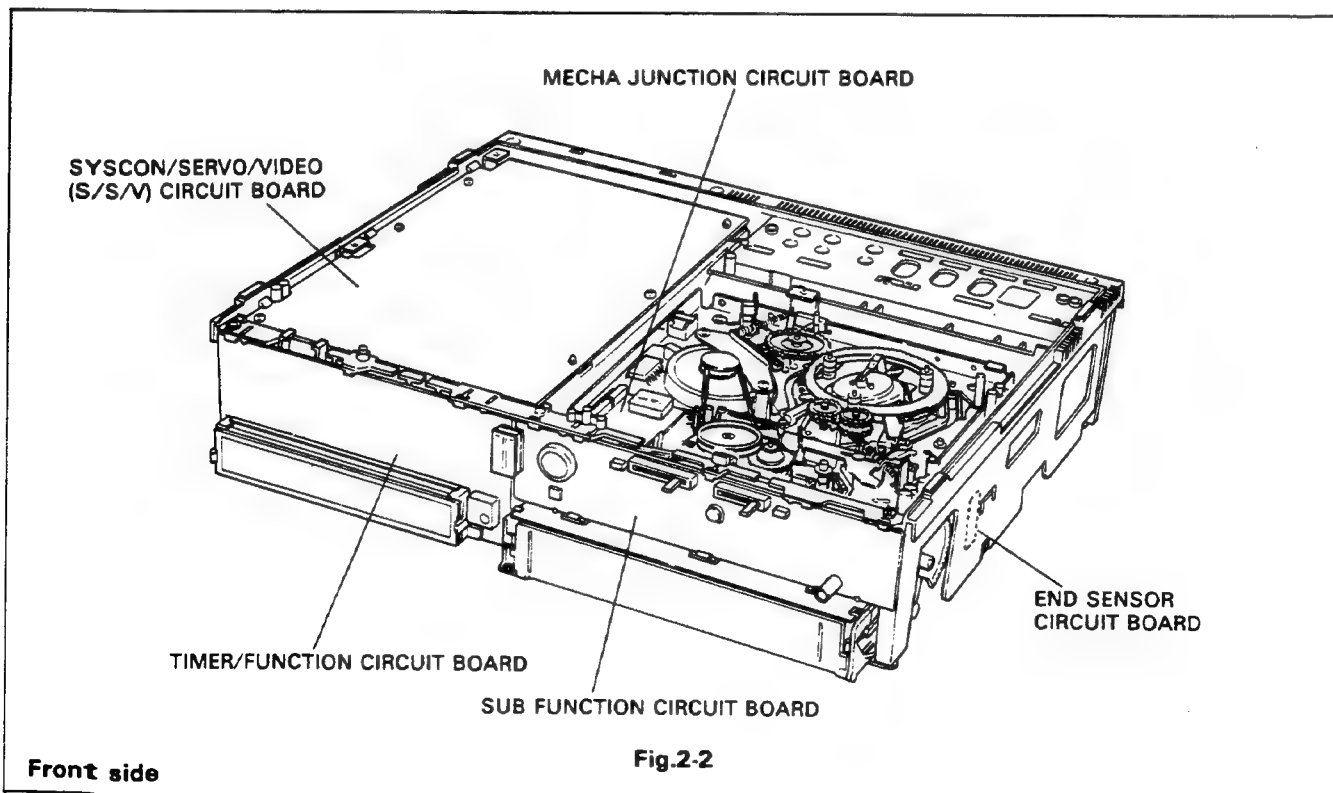
Note: After releasing tabs (6), be sure to handle the tab set very carefully; Otherwise, the released tabs may return to their original locked positions.

2. CIRCUIT BOARD LOCATIONS

2-1. TOP VIEW



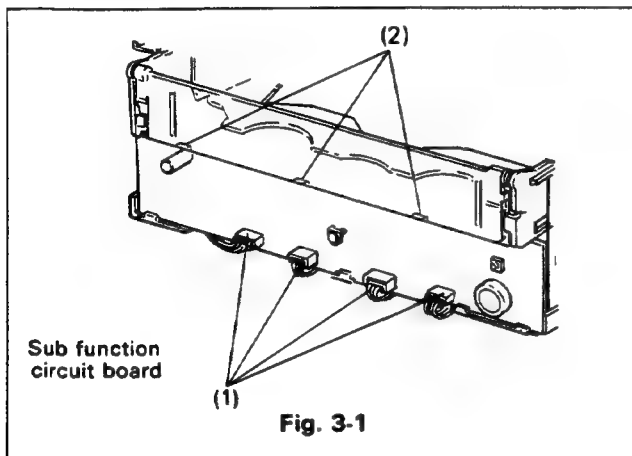
2-2. BOTTOM VIEW



3. REMOVING THE CIRCUIT BOARDS

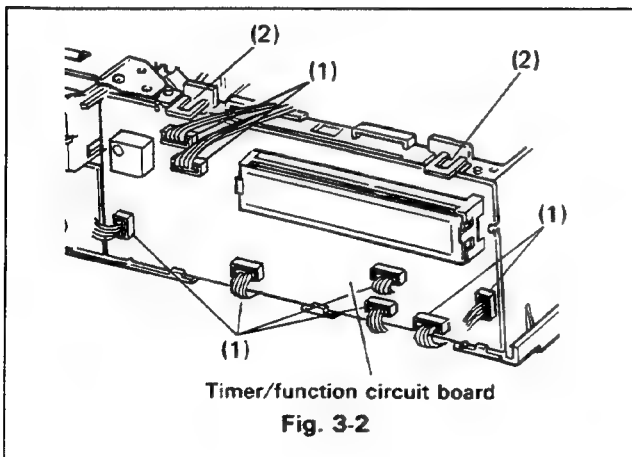
3-1. SUB FUNCTION CIRCUIT BOARD (Figure 3-1)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
- (2) Disconnect five wire connectors (1) from the circuit board.
- (3) Release three tabs (2) on the top of the circuit board in the direction of the arrow, and lift the circuit board to remove.



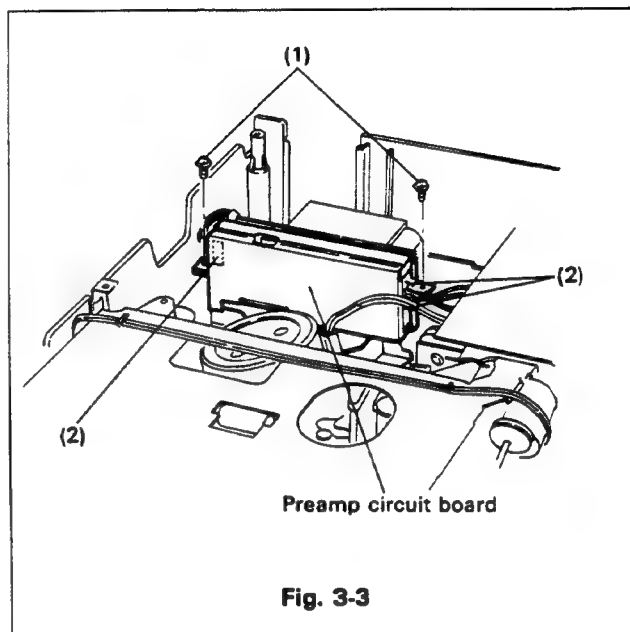
3-2. TIMER/FUNCTION CIRCUIT BOARD (Figure 3-2)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
- (2) Disconnect eight wire connectors (1) from the circuit board.
- (3) Release two tabs (2), and lift the circuit board to remove.



3-3. PREAMP CIRCUIT BOARD (Figure 3-3)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove two screws (1).
- (3) Disconnect three wire connectors (2) from the preamp circuit board.



Note: Be very careful not to damage the drum head circuit board when removing the preamp circuit board.

3-4. TUNER/IF CIRCUIT BOARD (Figure 3-4)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove three screws (1) from the tuner/IF circuit board.
- (3) Release two tabs (2).
- (4) Lift and tilt the tuner/IF circuit board toward the rear panel.
- (5) Disconnect the 75-ohm VHF cable (3).
- (6) Disconnect three wire connectors (4).

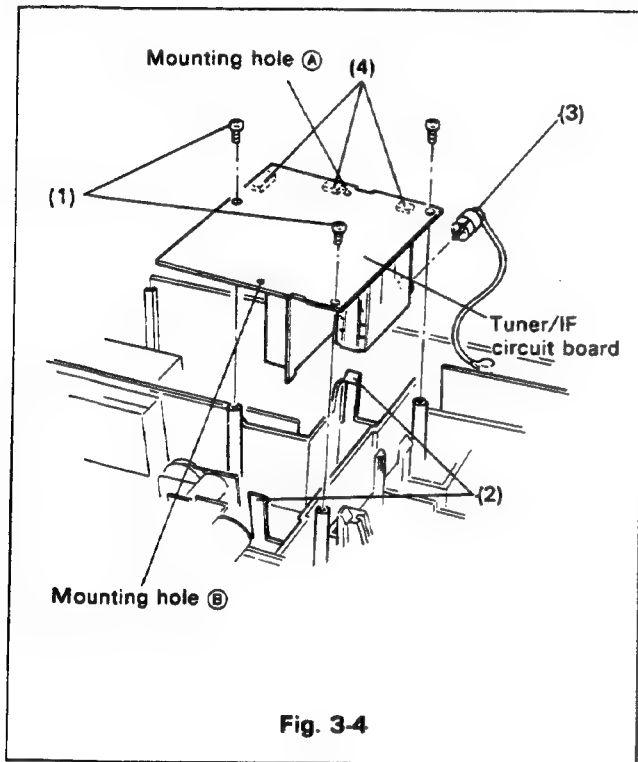
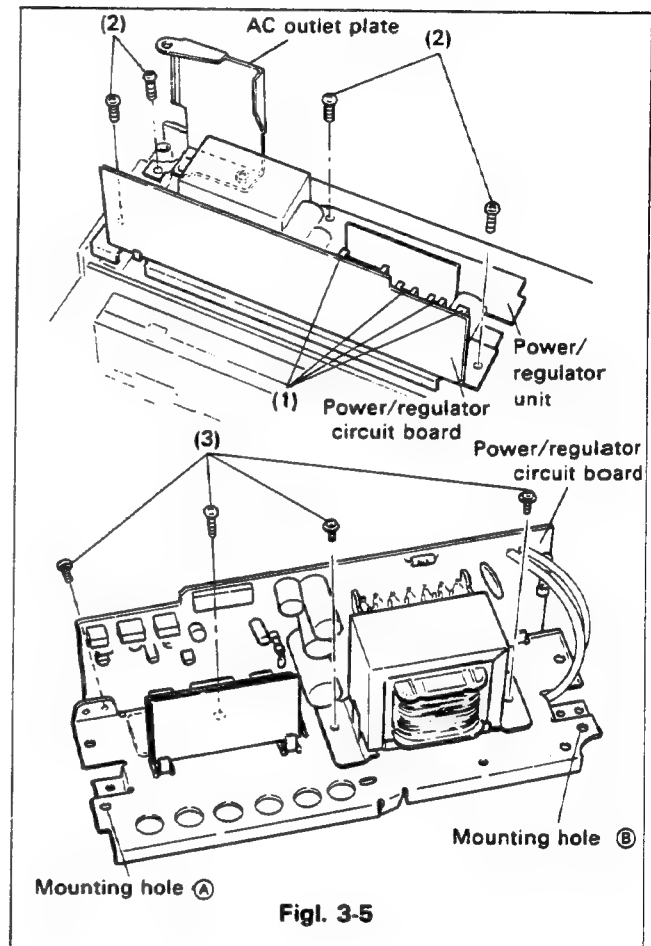


Fig. 3-4

Note: To install the circuit board, align the circuit board-mounting pins with mounting holes A and B.

3-5. POWER/REGULATOR CIRCUIT BOARD (Figure 3-5)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove the bottom cover. (Refer to Item 1-2.)
- (3) Remove the tuner/IF circuit board. (Refer to Item 3-4.)
- (4) Disconnect four wire connectors (1) from the power/regulator circuit board.
- (5) Remove four screws (2).
- (6) Lift the power/regulator unit together with the AC outlet plate to remove.
- (7) Remove four screws (3) to release the power/regulator circuit board from the base.



Figl. 3-5

Note: To install the power/regulator unit, align the mounting pins with mounting holes A and B.

3-6. JACK TERMINAL CIRCUIT BOARD (Figure 3-6)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Disconnect the 75-ohm cable (1).
- (3) Disconnect wire connector (2).
- (4) Pull the terminal plate up and remove the jack terminal circuit board.
- (5) Disconnect wire connector (3).

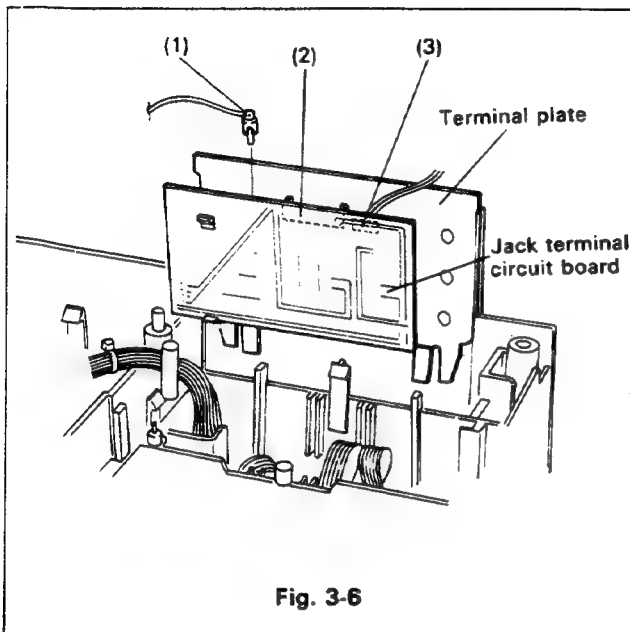


Fig. 3-6

Notes:

1. The jack terminal circuit board is united with the terminal plate.
2. To install the jack terminal unit, fit the terminal plate into the mounting position until it clicks in the locked position.

3-7. AUDIO CIRCUIT BOARD (Figure 3-7-1)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Disconnect four wire connectors (1) from the audio circuit board.
- (3) Release three tabs (2).
- (4) Release the circuit board from two slide hinges (3).

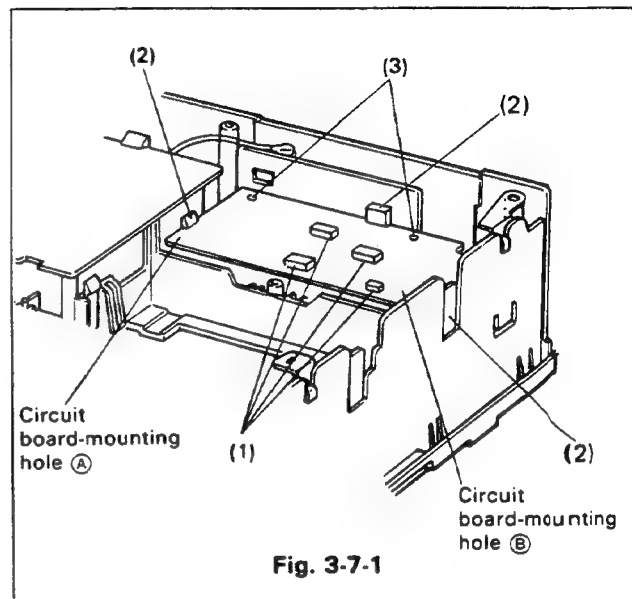


Fig. 3-7-1

To install the circuit board, align the circuit board-mounting pins with mounting holes A and B.

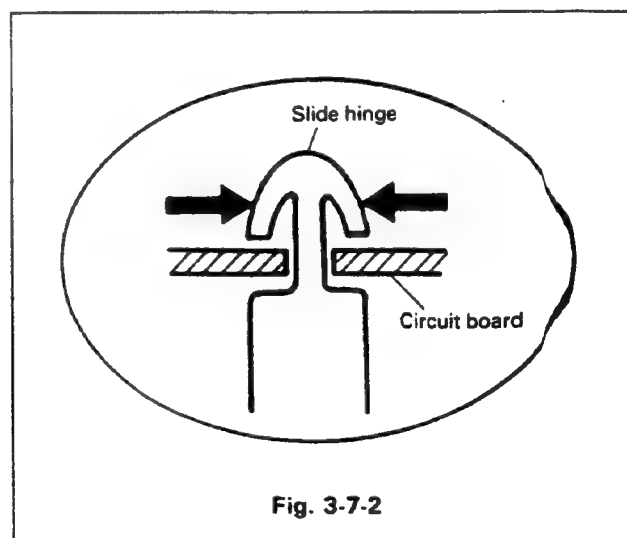


Fig. 3-7-2

Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

3-8. DIGITAL CIRCUIT BOARD (Figure 3-8)

- (1) Remove the top cover (Refer to Item 1-1)
- (2) Release five tabs (1).
- (3) Disconnect five wire connectors (2) from the digital circuit board.
- (4) Release the circuit board from two hinges (3).

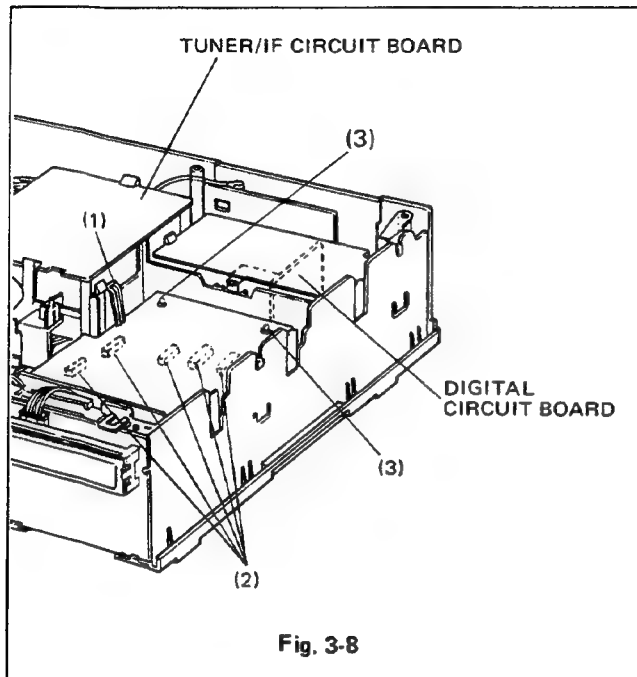


Fig. 3-8

3-10. ON SCREEN CIRCUIT BOARD (Figure 3-10)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Release the three tabs (1) on the audio circuit board.
- (3) Raise slide hinge (2) for the audio circuit board until the board is upright.
- (4) Remove the screw from clamp (3) for the on-screen circuit board.
- (5) Disconnect two wire connectors (4).

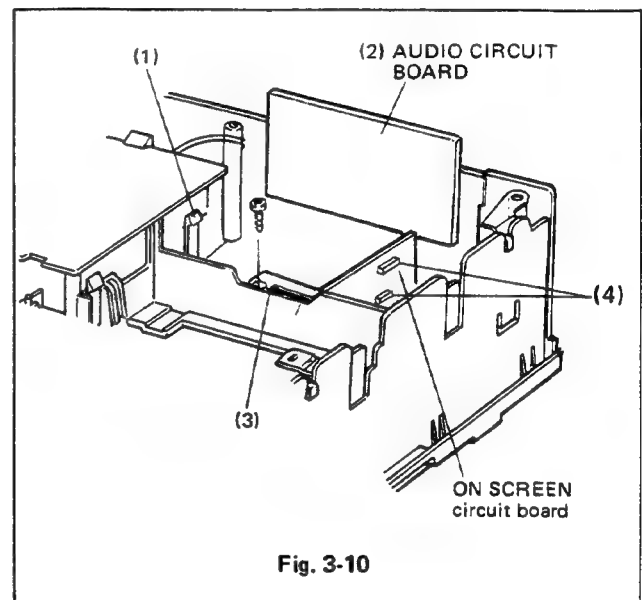


Fig. 3-10

3-9. VPS DECODER CIRCUIT BOARD (Figure 3-9)

- (1) Remove the top cover. (Refer to Item H.)
- (2) Remove pwb bracket (1) in the arrow direction.
- (3) Disconnect the three connectors (2) on the VPS decoder circuit board.

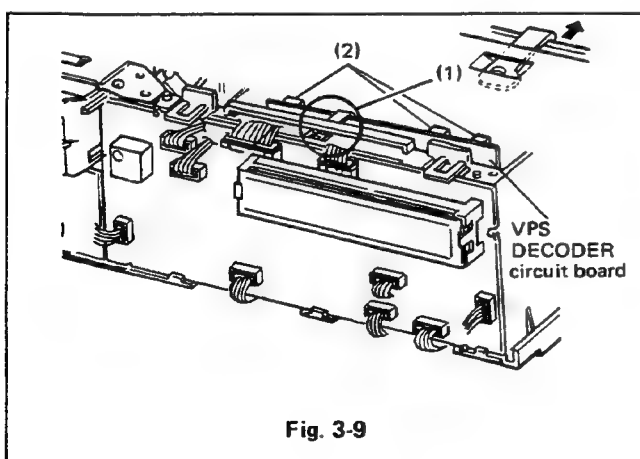


Fig. 3-9

3-11. S/S/V CIRCUIT BOARD (Figure 3-11-1)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove the bottom cover. (Refer to Item 1-2.)
- (3) Perform steps (2) and (3) in the Item 3-7, and raise the audio circuit board toward the rear panel.
- (4) Disconnect seventeen wire connectors (1) from the S/S/V circuit board from inside the VCR.
- (5) Remove five screws (2) from the S/S/V circuit board.
- (6) Release three tabs (3).
- (7) Release the circuit board from the two slide hinges (4).

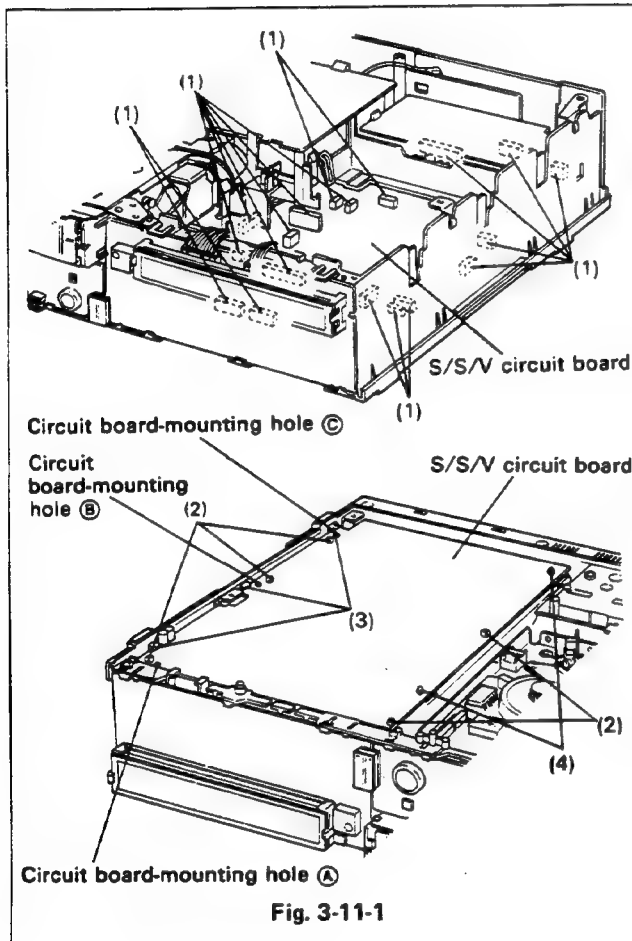


Fig. 3-11-1

To install the circuit board, align the circuit board-mounting pins with mounting holes ⑦, ⑧ and ⑨.

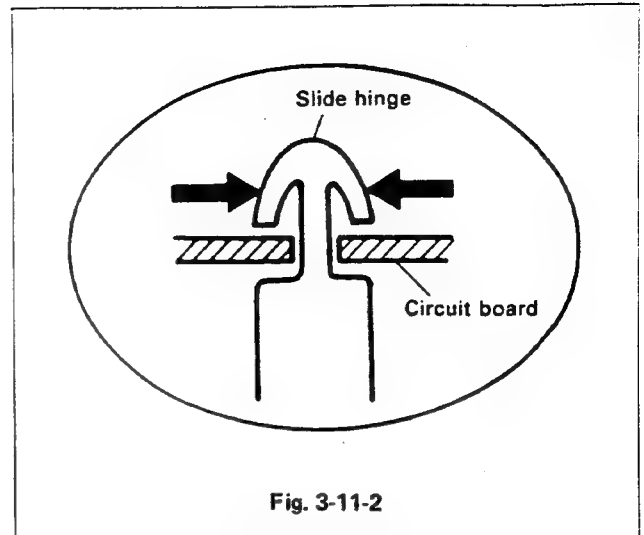


Fig. 3-11-2

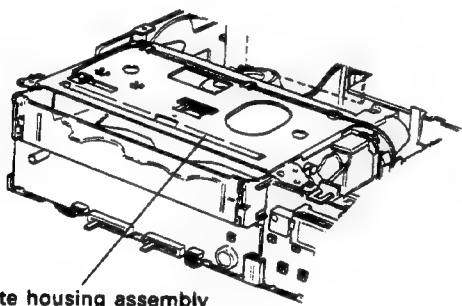
Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

4. REMOVING THE CASSETTE MECHANISM

4-1. REMOVING THE CASSETTE HOUSING ASSEMBLY (Figures 4-1-1, 4-1-2)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
- (2) Remove two screws (1). Pull up the rear part of the cassette housing assembly and pull backwards 4-5 mm carefully to release the claw of the front side of the cassette housing assembly from the chassis. Then carefully pull it out upwards.
- (3) Disconnect connector (2).
- (4) To remove the cassette loading circuit board, release four tabs (3).

Note: The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than the ones originally removed.



Cassette housing assembly

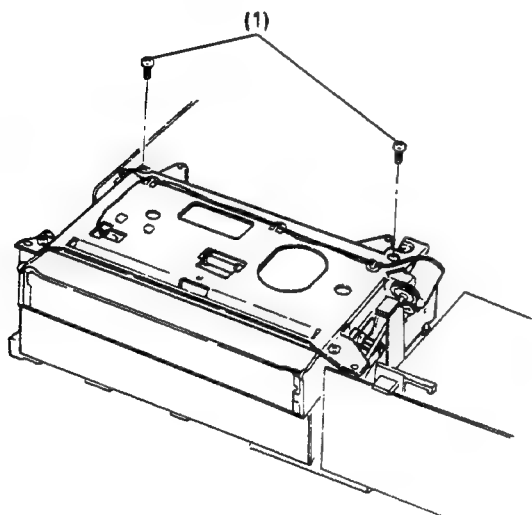


Fig. 4-1-1

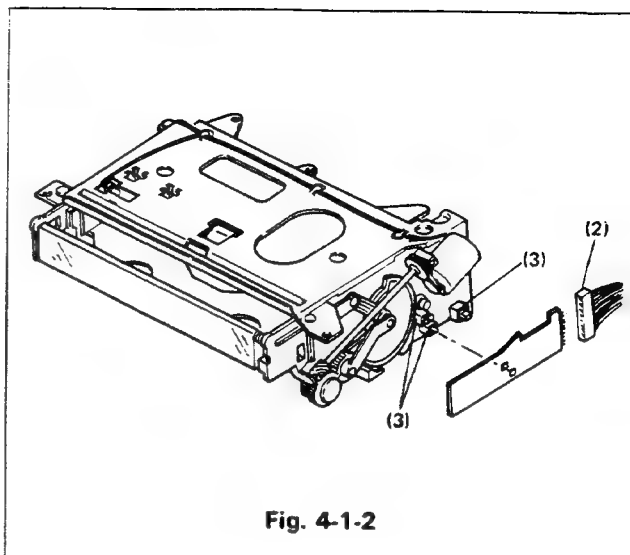


Fig. 4-1-2

4-2. FRONT COVER (Figure 4-2)

- (1) Push the front cover into the cassette housing.
- (2) Push the side panel (L) outward, and remove the front cover, together with the front cover spring.

Push this part outward to remove the front cover.

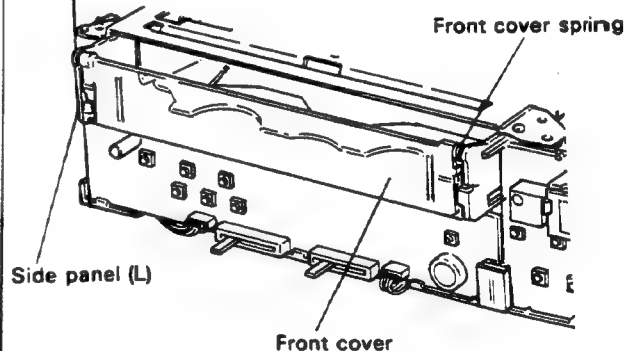


Fig.4-2

4-3. MODE SENSOR CIRCUIT BOARD (Figure 4-3)

- (1) Remove the bottom cover. (Refer to Item 1-2.)
- (2) Remove screw (1).
- (3) Disconnect wire connector (2) to remove the mode sensor circuit board.

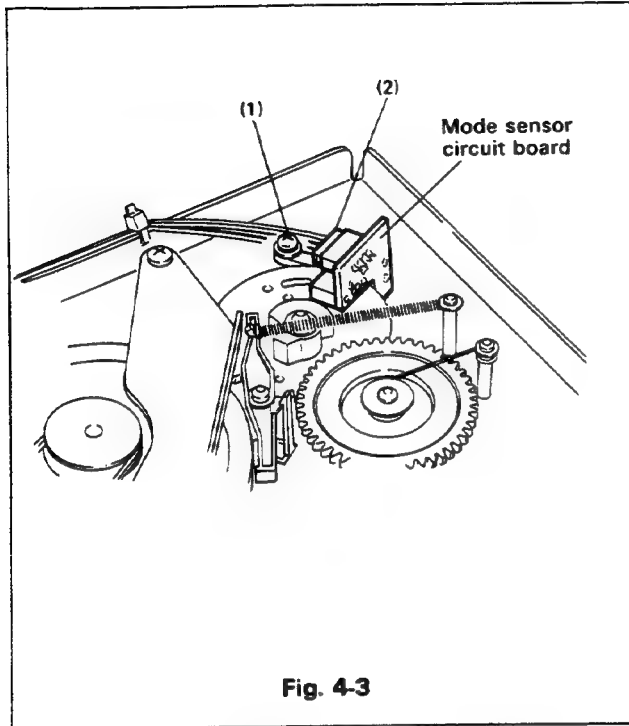


Fig. 4-3

4-4. END SENSOR CIRCUIT BOARD (Figure 4-4)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove the cassette housing assembly. (Refer to Item 4-1.)
- (3) Remove the solder from the two lead wires (1) of the REC Safety Switch located under the front cover.
- (4) Release tab (2) toward the bottom, and lift the end sensor circuit board to remove.

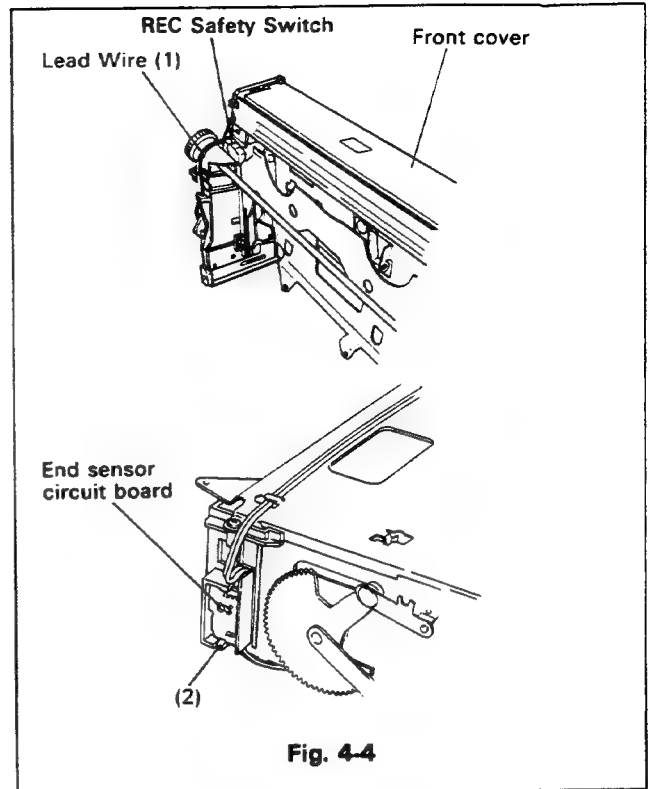


Fig. 4-4

4-5. MECHA JUNCTION CIRCUIT BOARD (Figure 4-5)

- (1) Remove the bottom cover. (Refer to Item 1-2.)
- (2) Disconnect flat cable (1).
- (3) Disconnect connector (2) and junction (3).
- (4) Release tabs (4) and lift the circuit board a little to remove.

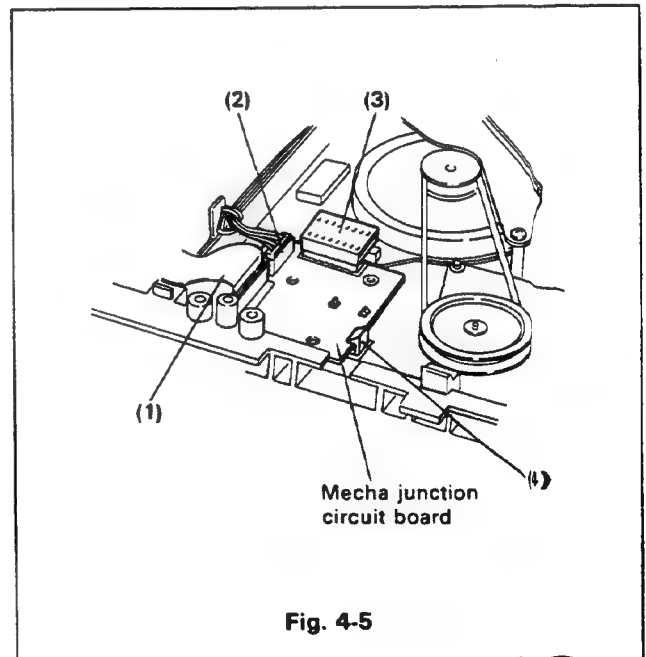

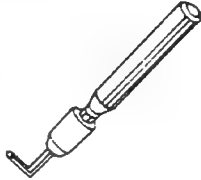
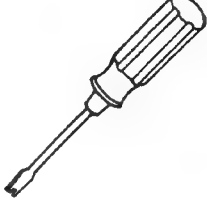

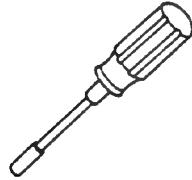


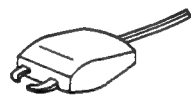


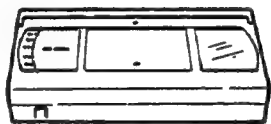
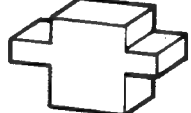
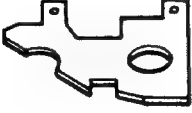
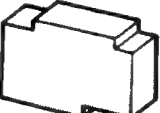
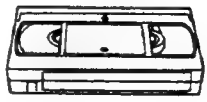


Fig. 4-5

SECTION 3 ADJUSTMENT

1. MECHANICAL ADJUSTMENT

1-1. SERVICING JIGS AND TOOLS

| | | | |
|---|--|---|---|
| <p>J-1 Checking mirror For tape flow check and adjustment procedures</p>  <p>16950871</p> | <p>J-2 Hexagonal driver For guide roller screw</p>  <p>16951281</p> | <p>J-3 Adjustment driver For guide roller</p>  <p>16951291</p> | <p>J-4 Adjustment driver For tapered pin of ACE head</p>  <p>16951301</p> |
| <p>J-5 Box driver For ACE head, guide pole and reverse pin</p>  <p>16951311</p> | <p>J-6 Alignment tape (MH-2) Overall adjusting of picture quality and tracking MH-2 79V20196</p>  | <p>J-7 Cleaning liquid (isopropyl alcohol) cleaning cloth for cleaning</p>  <p>NOTE* 16950001</p> | <p>J-8 Head demagnetizer demagnetizing audio heads</p>  <p>NOTE*</p> |
| <p>J-9 Cleaning cassette tape For cleaning video heads</p>  <p>NOTE*</p> | <p>J-10</p> <ul style="list-style-type: none"> ● Torque meter (600g/cm) Ass'y 79V20199 ● Torque meter 79V20200 (600g/cm) ● Torque meter adaptor 79V21508 (Substitute 79V20201)  | <p>J-11 Back tension cassette gauge 79V20202</p>  | <p>J-12 Height Gauge AM-2 Jig</p>  <p>16951431</p> |
| <p>J-13 Master Plane B Jig</p>  <p>16951381</p> | <p>J-14 Height Gauge BM-2 Jig</p>  <p>16951441</p> | <p>J-15 Cassette tape (E-120) For checking tape path</p>  <p>NOTE*</p> | |

Note: This item not available from parts dept.

Fig. 1-1

1-2. MECHANISM ASSEMBLY

1-2-1 Removing the mechanism assembly (Figure 1-2)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3)
 - (2) Remove the tuner/IF circuit board. (Refer to Item 3-4.)
 - (3) Remove the preamp circuit board. (Refer to Item 3-3.)
 - (4) Remove the cassette housing assembly. (Refer to Item 4-1.)
 - (5) Disconnect wire connector and drum heater (yellow) of the rotary drum assembly.
 - (6) Remove two screws of the lead wires with ground lug.
 - (7) Disconnect two connectors from the ACE head assembly.
 - (8) Disconnect connectors from the full erase head.
 - (9) Disconnect the flat cable from the mecha junction circuit board.
- Note:** The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than removed ones.

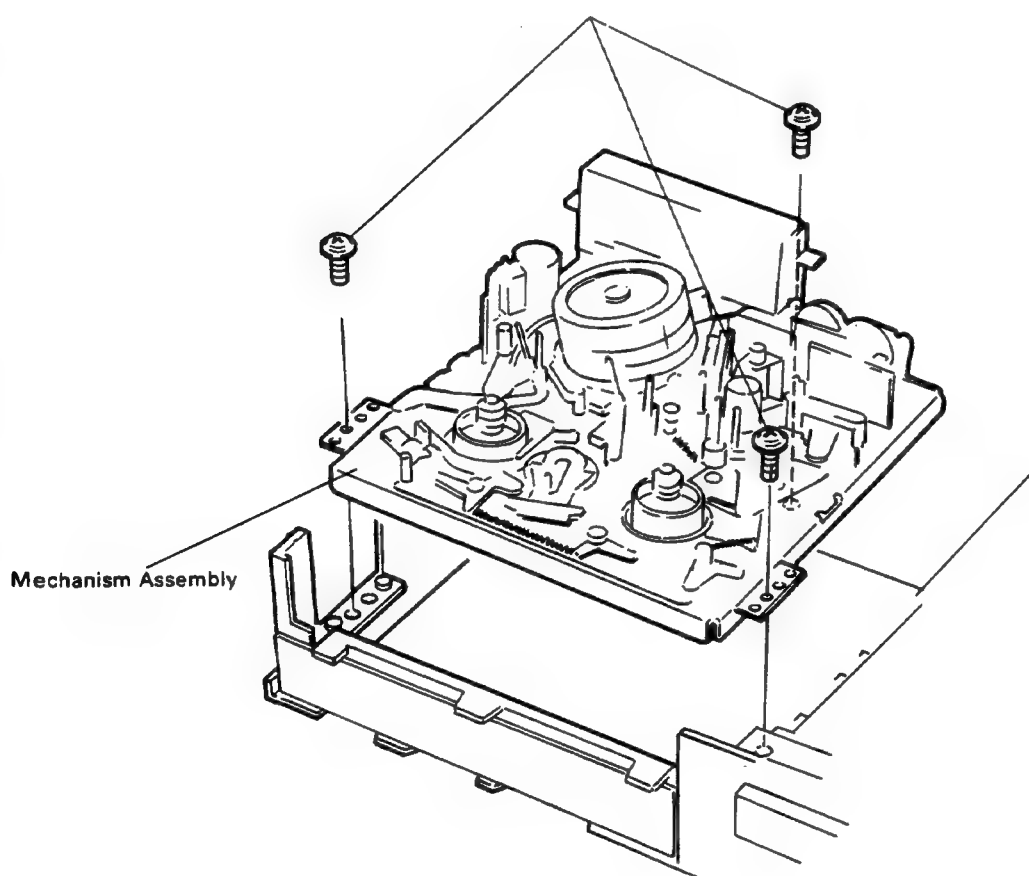
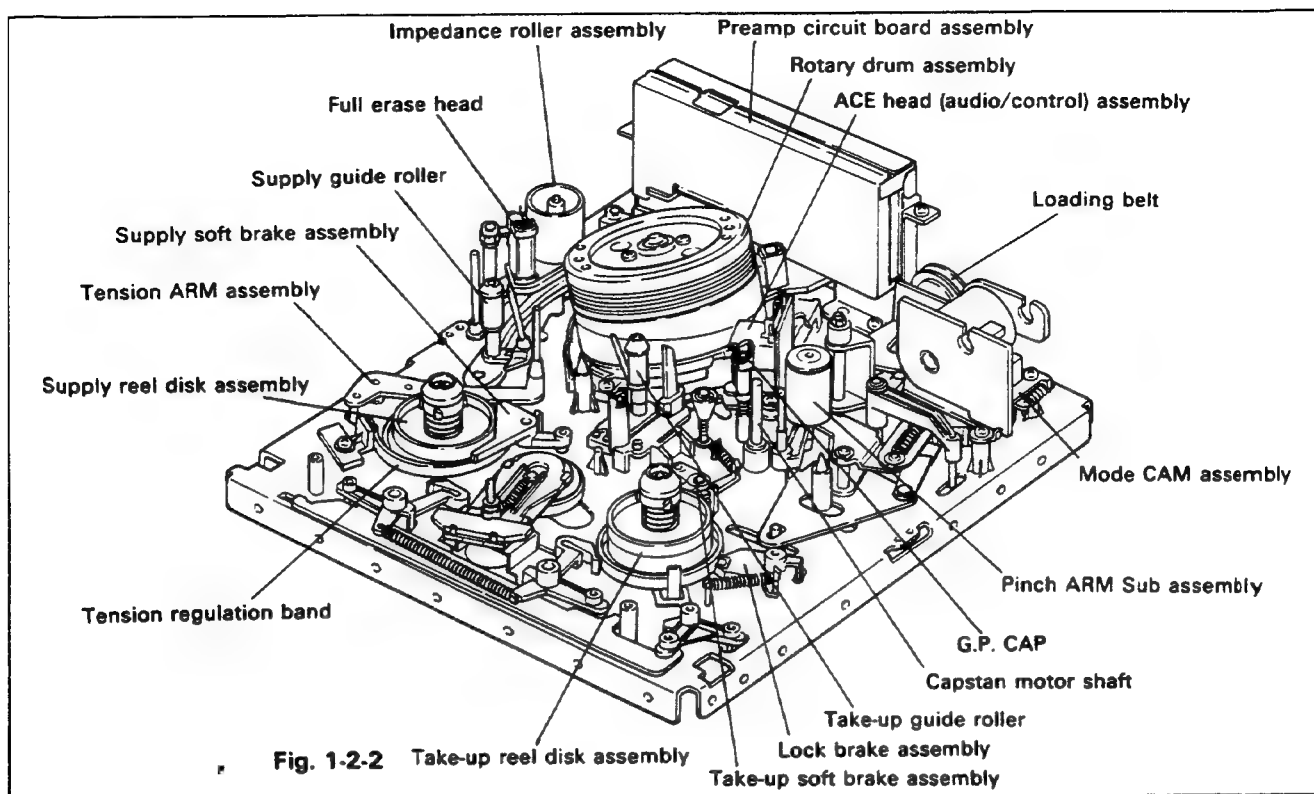


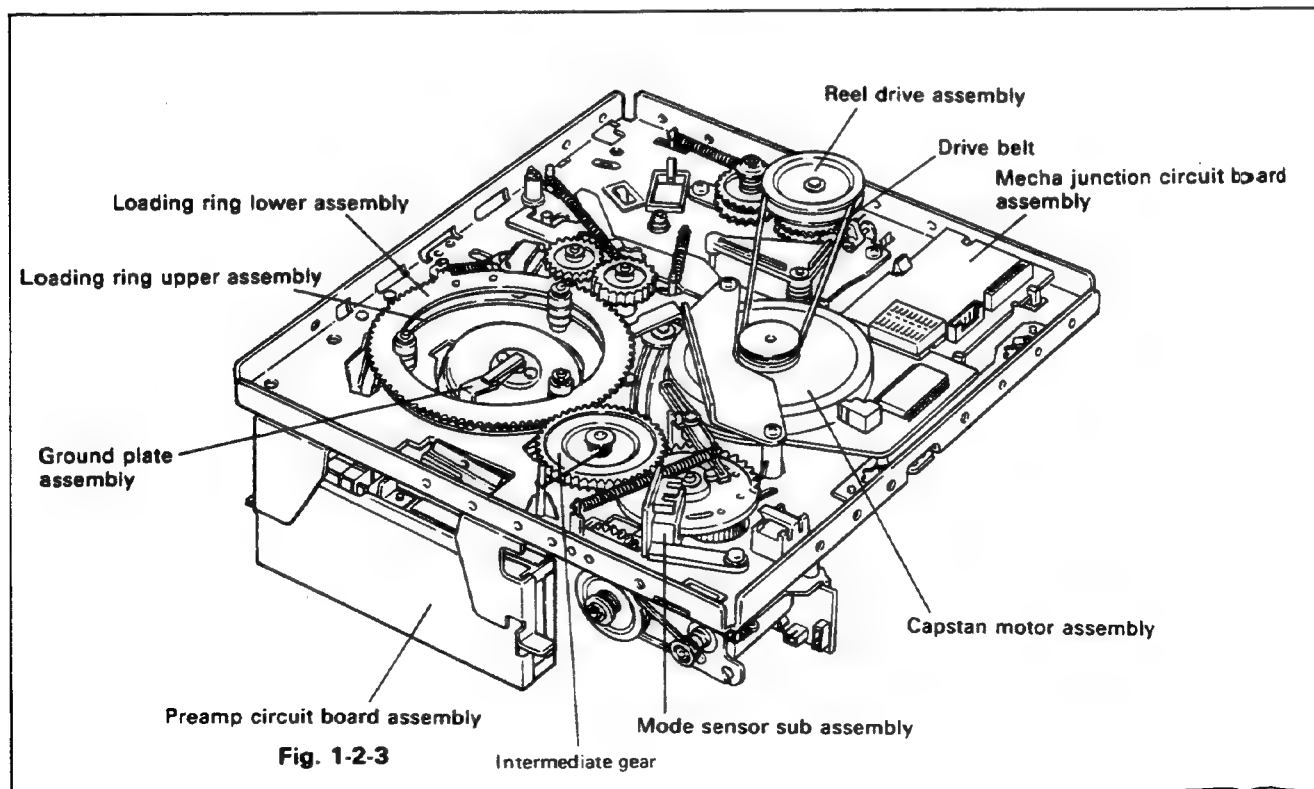
Fig. 1-2

1-2-2 Mechanism parts locations

Top view



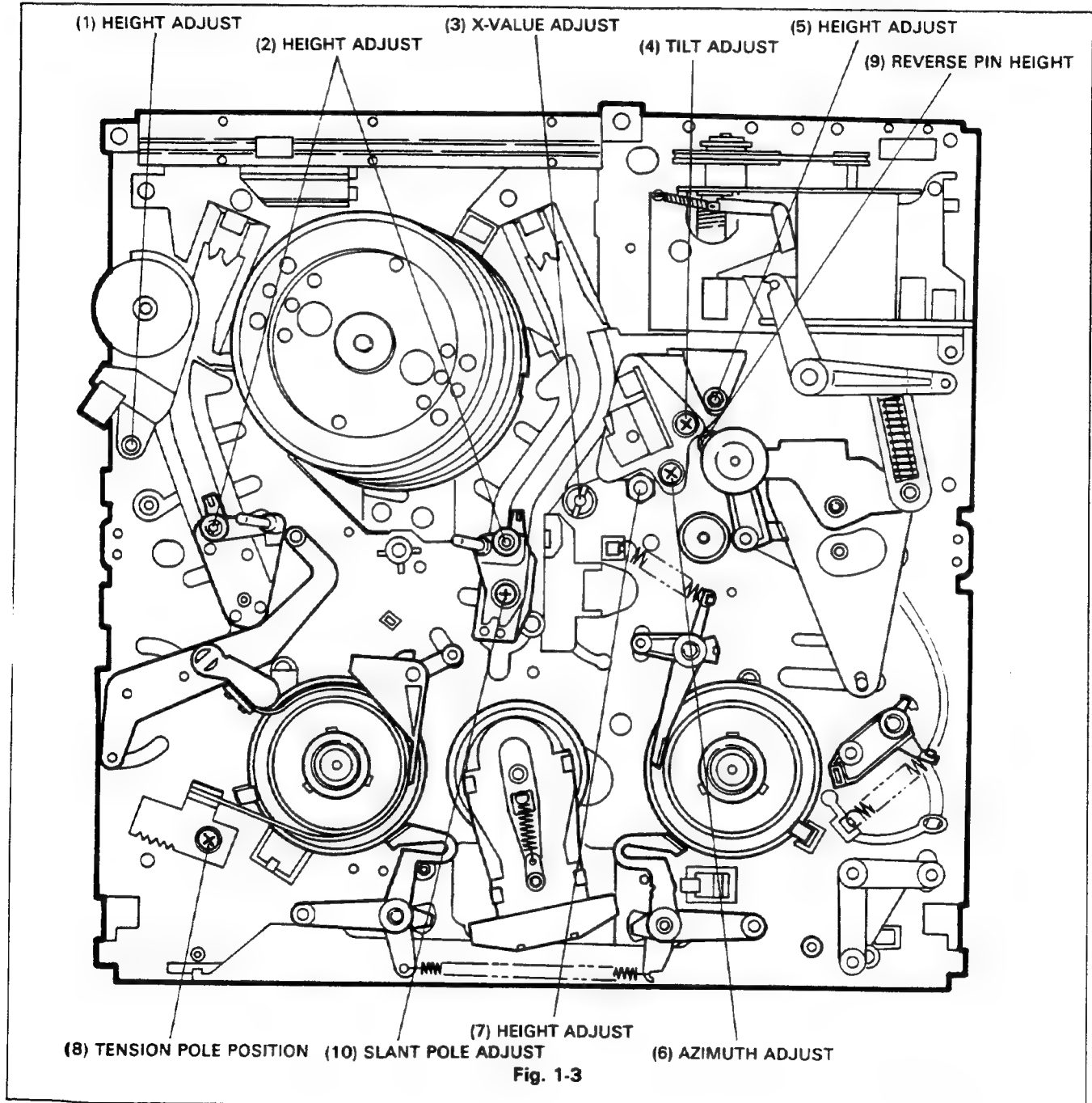
Bottom view



1-3. BEFORE DISASSEMBLING PARTS ON THE CHASSIS (Figure 1-3)

Do not turn the adjusting screws shown below when removing adjacent parts.

- | | |
|---|--|
| (1) Supply guide pole height adjusting nut. | (6) ACE Head azimuth adjusting screw. |
| (2) Take-up/supply guide roller height adjusting screw. | (7) Take-up guide pole height adjusting nut (cap per). |
| (3) ACE Head X value adjusting nut. | (8) Tension band fixing screw. |
| (4) ACE Head tilt adjusting screw. | (9) Reverse pin height adjusting nut. |
| (5) ACE Head height adjusting nut. | (10) Slant pole adjusting screw. |

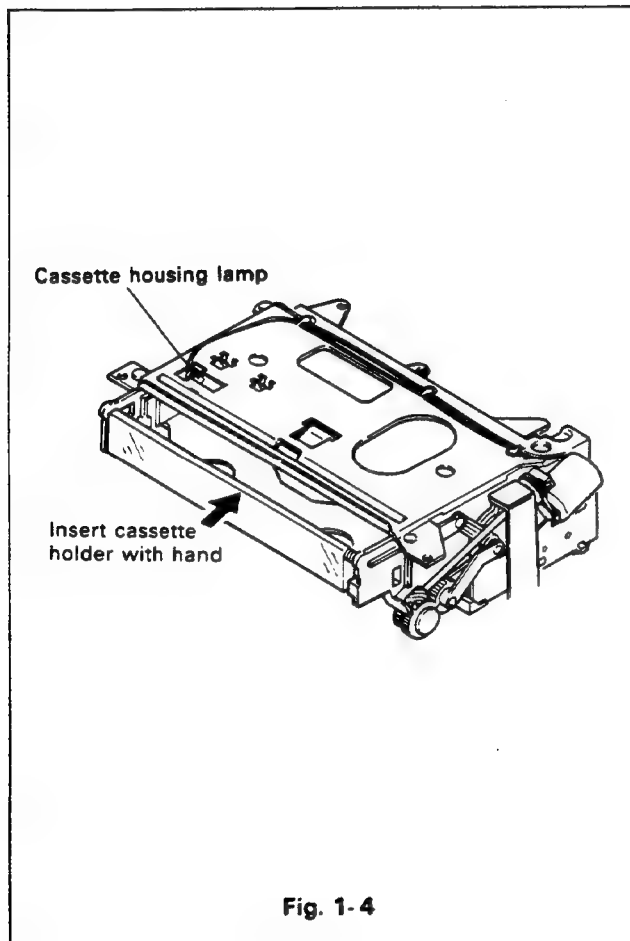


Note: When replacing parts and removing the nylon nut for adjustment, be sure to use the removed nylon nut.

1-4. BEFORE ADJUSTING THE MECHANISM (Figure 1-4)

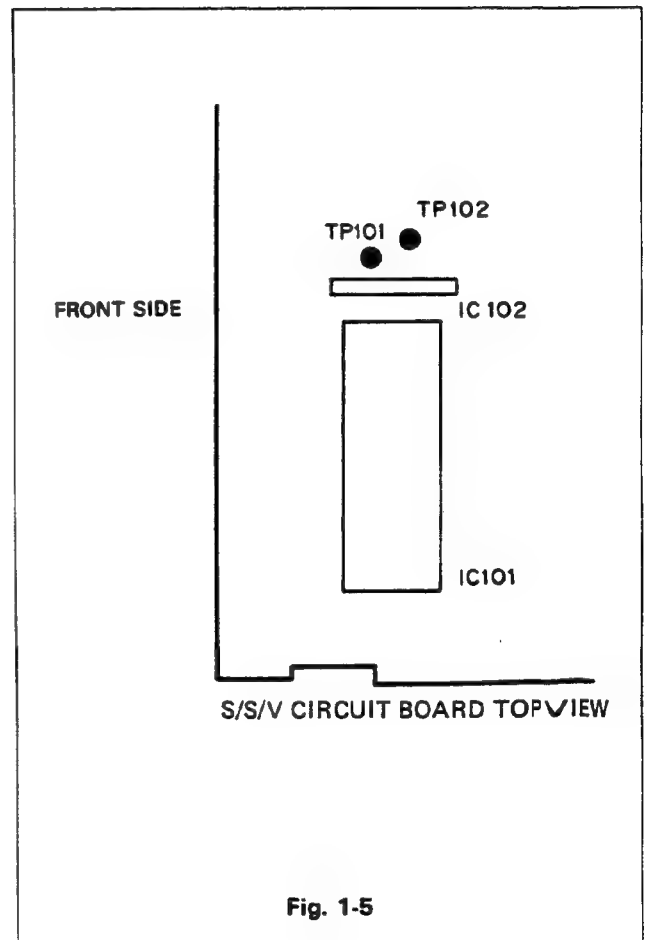
"Adjustment procedures" have been written as a guide to achieve proper operation after replacing the mechanism parts (when required by normal wear and tear or accidental damage).

Since the mechanism adjustment procedures are closely related to the adjustment of the electrical circuitry, and form the basis of the electrical circuitry adjustment procedures, carefully follow the mechanism procedures by observing the proper precautions.



1-5. SERVICING PRECAUTIONS (Figure 1-5)

- (1) Pay special attention to how and where the unit is placed when removing the exterior casing of the unit, and when servicing with the circuit boards removed.
- (2) Prevent the loss of screws by putting every removed screws into a container stored at one location.
- (3) Since the surface area of the left and right sides of the unit is small, take special precautions when working with the unit standing on its side so that it will not fall over.
- (3) When operating without using a cassette, short TP101 and TP102 on the S/S/V circuit board shown in Fig. 1-5 with a clip.



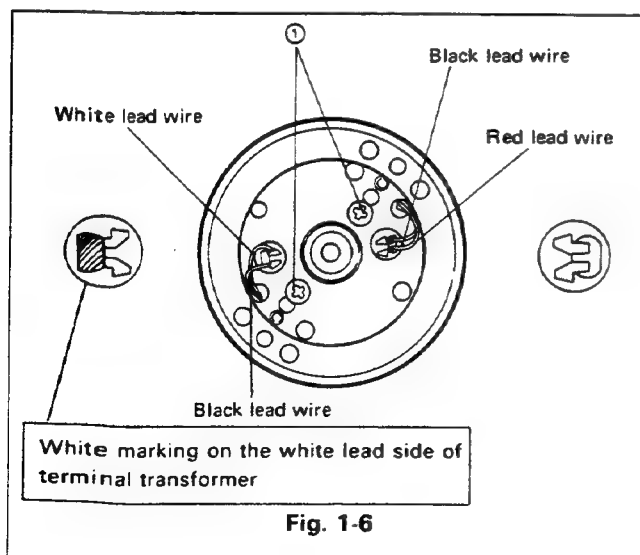
1-6. REPLACEMENT OF UPPER ROTATING DRUM ASSEMBLY (Figure 1-6)

- (1) Remove the solder from the four lead wires that connect the video heads to the terminal transformer. (Perform this removal quickly so as not to damage the insulation of the lead wires.)
- (2) Remove two screws ①, then lift the rotating drum assembly upward and remove it.
- (3) Use alcohol (isopropyl) to clean the flange surface of the lower drum and the surface on the new rotating drum assembly that will come into contact with the flange. Position the rotating drum assembly so that the wire is aligned with the white marking on the shaded area of the terminal transformer, as shown in Fig. 1-6, then carefully slide it down into place.

Note:

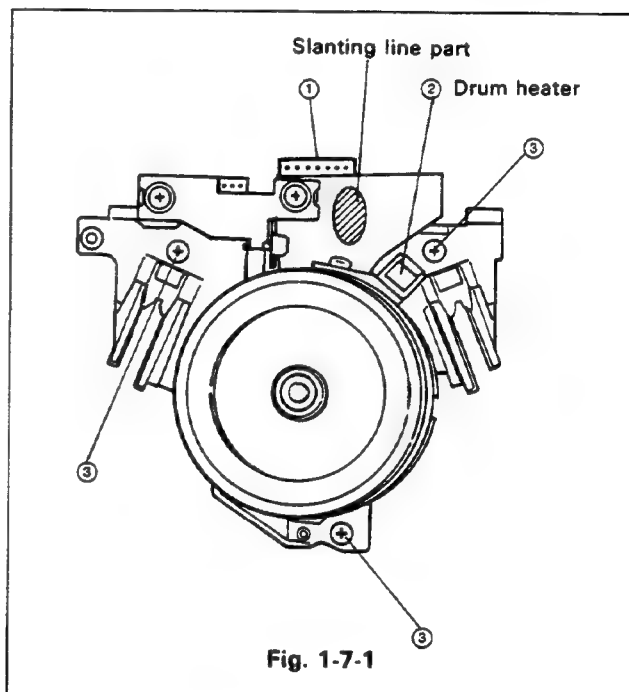
- 1) Be sure not to touch the head tips, or strike and damage them.
- 2) If the rotating drum assembly should become hooked on some obstruction before it has been slid completely into place, do not attempt to force it. Remove it and try again.

- (4) Tighten two screws ① alternately, then solder the four lead wires to their correct positions on the terminal transformer, and make sure that all connections are solid and secure.
- (5) After the rotating drum assembly has been replaced, be sure to carry out the following checks and adjustments.
 - 1) Control head phase adjustment (refer to Section 3-4)
 - 2) Playback switching point adjustment (refer to Section 3-1).
 - 3) Checking and adjustment of entire video and audio systems (refer to Sections 4-2, 4-3 and 4-5).



1-7. REPLACEMENT OF DRUM ASSEMBLY (Figure 1-7)

- (1) Remove the preamp circuit assembly. (Refer to Item 3-3.)
 - (2) Remove the drum assembly connector ① and drum heater ②. (When removing connector ① hold down the slanting line part of the print substrate.)
 - (3) Remove the three screws ③ and then remove the drum assembly.
- Note:** Do not touch the drum head tips or damage the drum assembly during this procedure.
- (4) Follow the above instructions in reverse order to install the drum assembly.



- (5) After replacing, check and adjust as follows.
 - 1) Adjust tape path. (Refer to Section 2.)
 - 2) Adjust for compatibility. (Refer to Section 3.)
 - 3) Make necessary adjustments to the servo system, video system, and audio system. (Refer to Sections 4-2, 4-3 and 4-5.)

NOTE

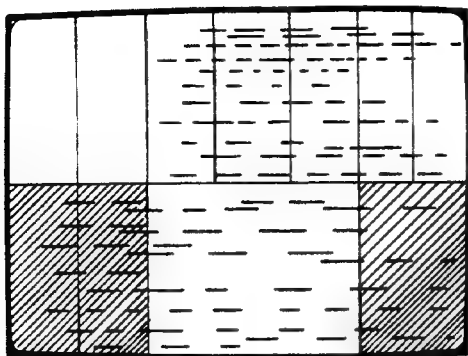
The following items must be checked after replacing the drum assembly.

When you have replaced the drum assembly of the unit that do not have the capacitor *C654 0.022 μ F on the PWB S/S/V or S/S/A/V, make sure whether there is a phenomenon described as follows. (Refer to the illustration below.)

In some cases, the noise with colored dots appears on the entire picture screen as shown in the illustration. In this case add a ceramic capacitor 0.022 μ F between the pin (3) and pin (4) of the drum motor connector CN604 on the PWB S/S/V or S/S/A/V.

The exactly same phenomenon may possibly appear when you have replaced the PWB S/S/V or S/S/A/V, cure it in the same manner as above.

***Note:** C654 is the capacitor connected between the pins (3) and (4) of the connector CN604 on the PWB S/S/V or S/S/A/V.



(6) Handling of Service Drum Package

Remove the drum from the inner box as shown in the figure below. Remove the three black screws from inside of the box, remove the board, and then remove the drum assembly.

Note:

The drum assembly is precisely adjusted. Handle carefully to prevent it from becoming dirty, scratched, damaged or deformed in any way.

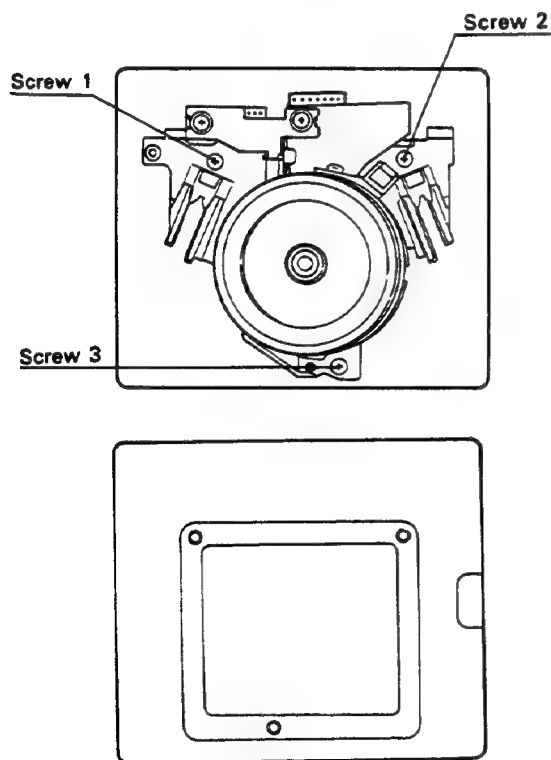


Fig. 1-7-2

1-8. REPLACEMENT OF GROUND PLATE (Figure 1-8)

1. After first placing the unit on its side, open the bottom of the unit and remove the screw ①.
2. Use the screw ① to attach the ground plate so that its contact area is aligned with the center of the drum assembly shaft.

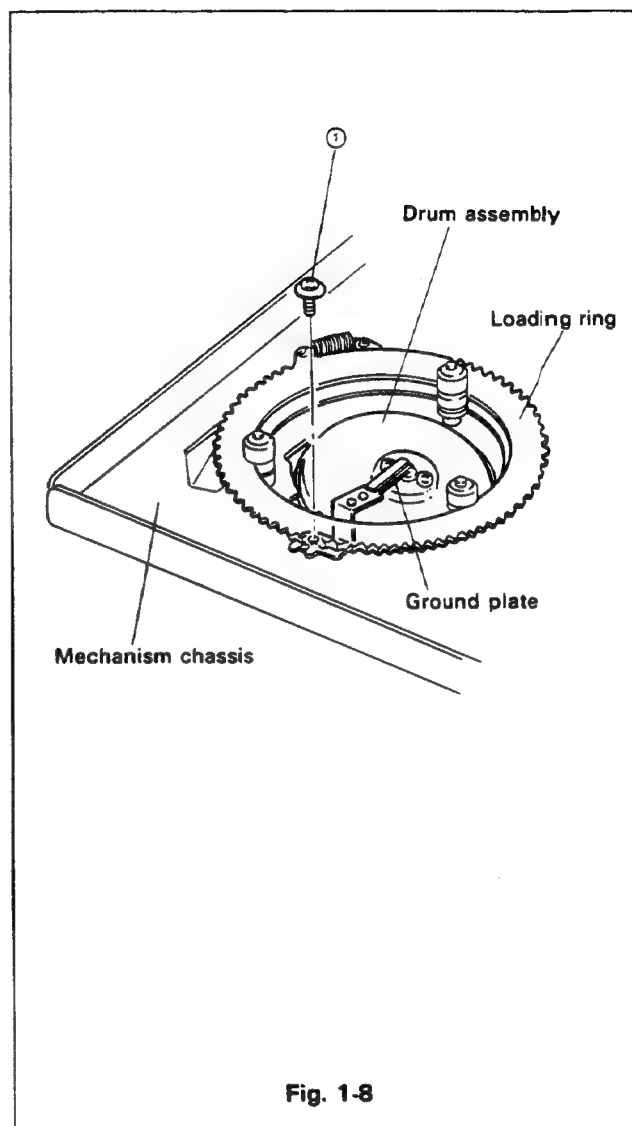


Fig. 1-8

1-9. AUDIO/CONTROL HEAD (Figure 1-9)

- (1) Remove connectors (A) and (B) from the ACE head circuit board. (Remove wires from clumper (1) first.)
- (2) Use a box driver (J-5) to remove nylon nut (2).
- (3) Rotate the ACE head assembly clockwise, so that it is slightly away from the taper pin, then pull upwards from the head pivot. Be careful during this procedure, because the (TC) spring applies pressure to the assembly.
- (4) Replace the ACE head assembly and mount it into position by following the above procedure in reverse.
- (5) After the ACE head assembly has been replaced, adjust the height of the new ACE head assembly.
- (6) To adjust the height of the ACE Head, first place the Master Plane B Jig (J-13) on the chassis. Place the Height Gauge BM-2 Jig (J-14) on J-13 with the surface marked with an "H" facing up, and use the nylon nut box driver (J-5) to adjust to the same height as part A. Also, adjust the height of the tapered pin by following the same procedure as for the ACE Head. Use adjustment driver (J-4) to adjust to the same height as part B.

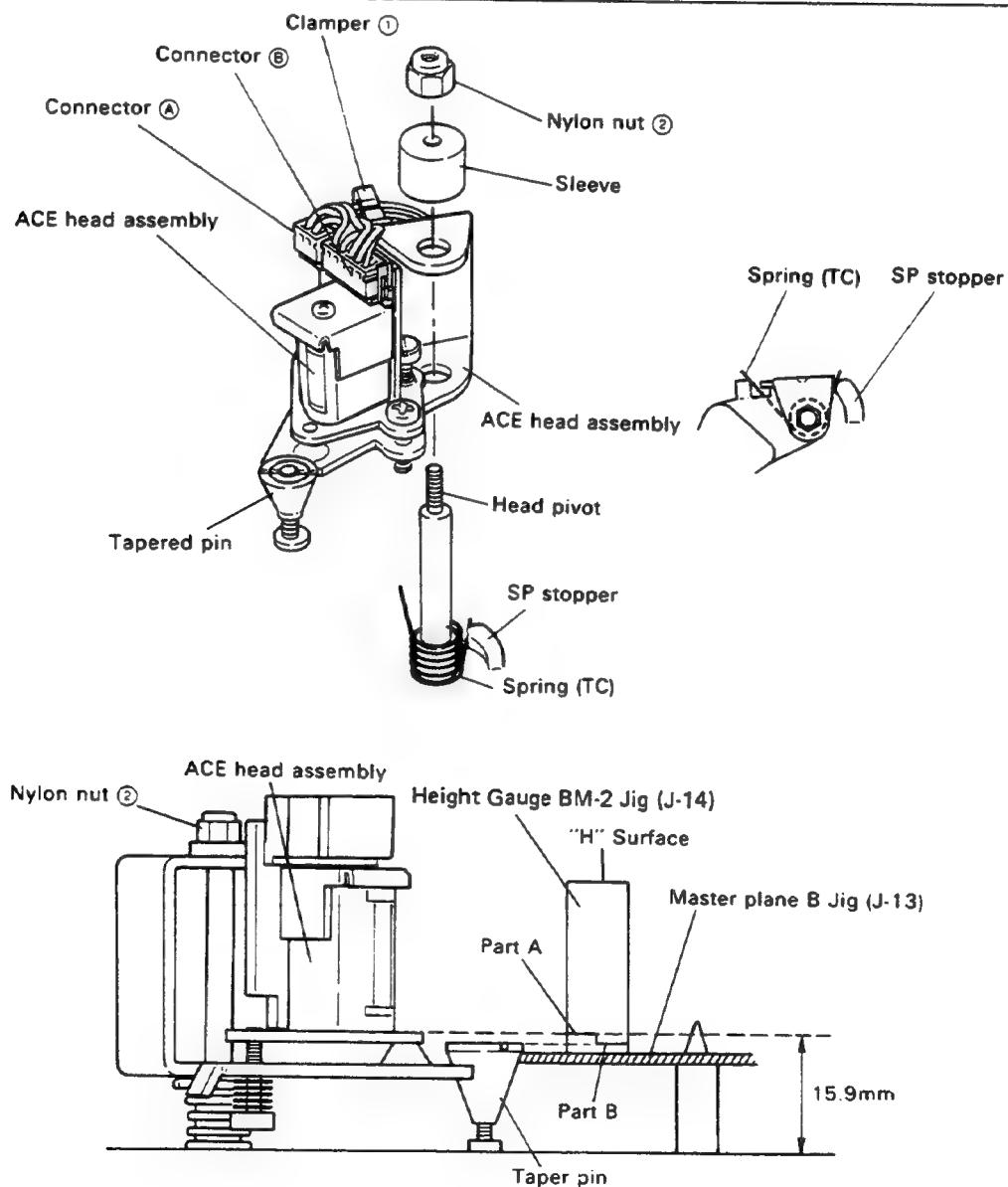


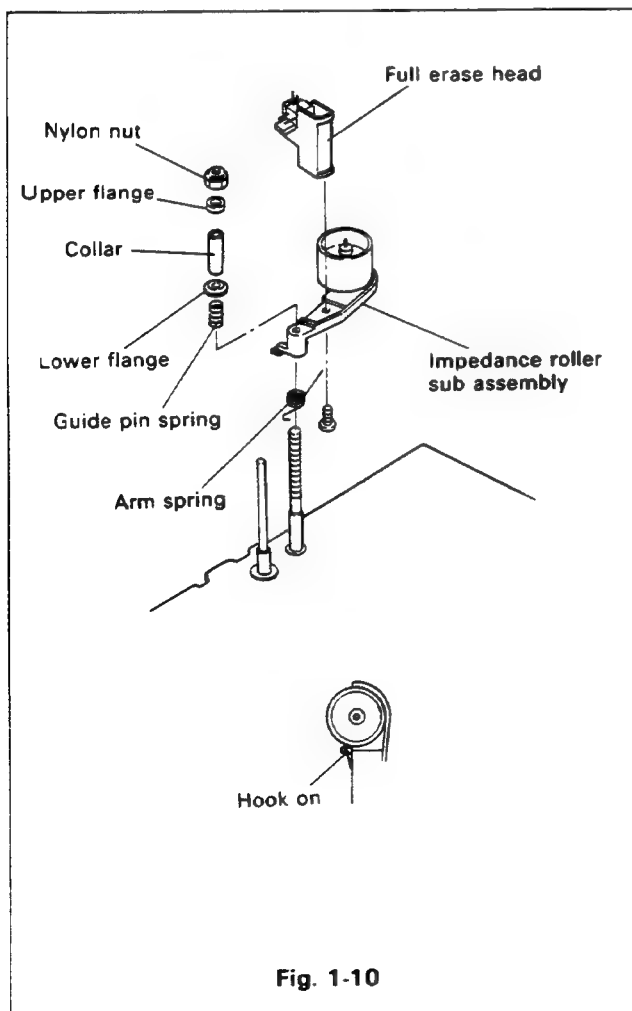
Fig. 1-9

1-10. FULL ERASE HEAD (Figure 1-10)

- (1) Remove the connector from the full erase head.
- (2) First remove the nylon nut, then remove the upper flange, collar, lower flange, guide pin spring, and arm spring.
- (3) Remove the impedance roller Sub assembly upwards.
- (4) Remove the screw that secures the full erase head from underneath the impedance roller arm. Then remove the full erase head itself.
- (5) Replace the full erase head and mount it into position, following the above procedure in reverse.

1-11. IMPEDANCE ROLLER SUB ASSEMBLY (Figure 1-10)

- (1) Remove the nylon nut, the upper flange, collar, lower flange, guide pin spring, and arm spring.
- (2) Remove the impedance roller Sub assembly upwards.
- (3) Replace the impedance roller Sub assembly and mount it into position by following the above procedure in reverse.

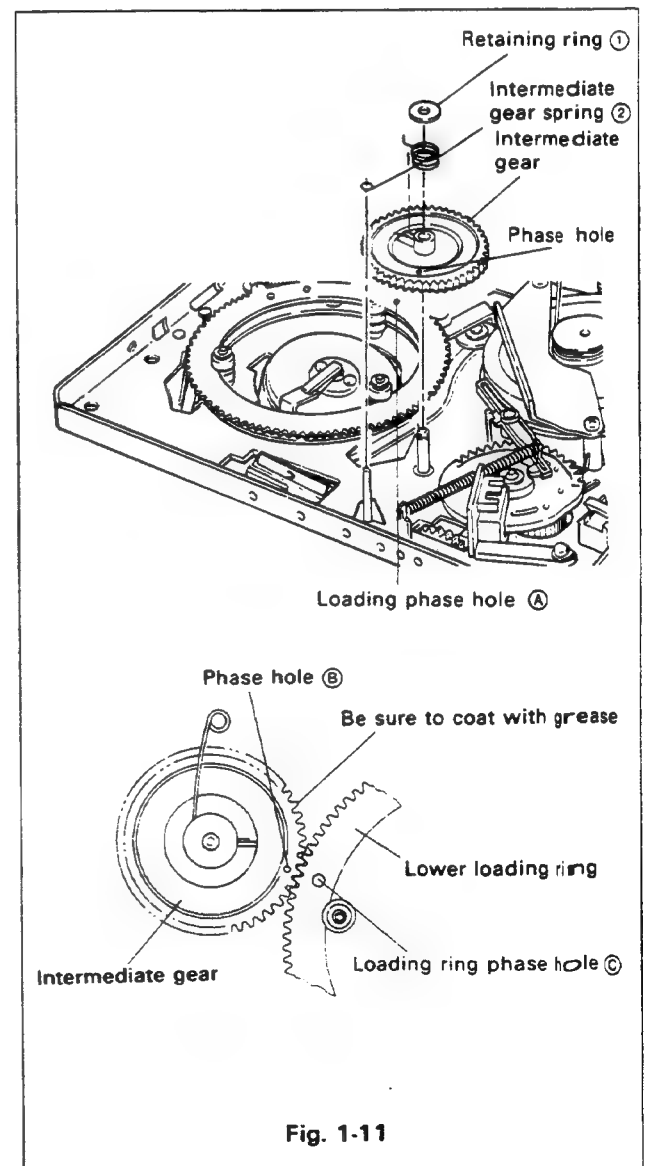


1-12. INTERMEDIATE GEAR (Figure 1-11)

- (1) Remove the retaining ring ①. Then remove intermediate gear spring ②.
- (2) Remove the intermediate gear upwards.
- (3) Replace intermediate gear and mount it into position by following the above procedure in reverse.

Notes:

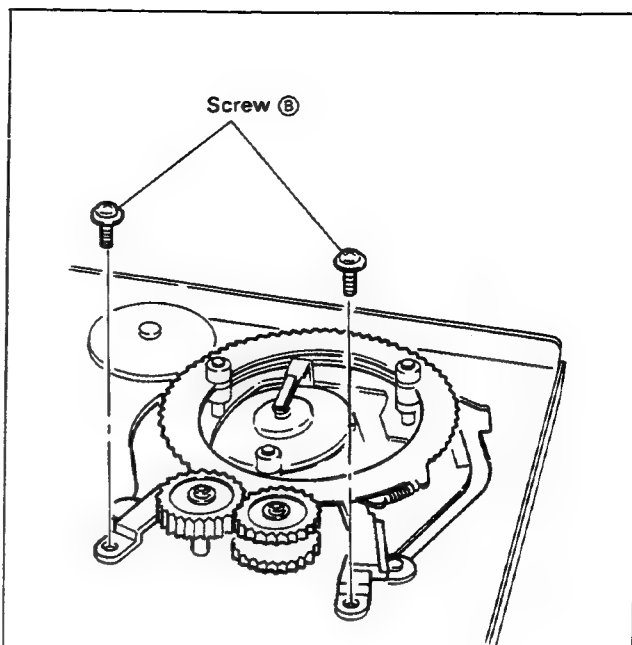
1. As shown in Fig. 1-11, when loading phase holes ① of the upper and lower loading rings are aligned, attach intermediate gear so that the phase hole ② of intermediate gear and phase hole ③ of the loading ring are facing each other, as shown in Fig. 1-11.
2. Be sure that intermediate gear spring ② is firmly secured to the lock of the intermediate gear.



1-13. S SLANT BASE/TU SLANT BASE SUB ASSEMBLY (Figure 1-12)

- (1) Remove the preamp circuit board assembly (Refer to Item 3-3 of Section 2.)
- (2) Remove connector ① of the drum assembly and drum heater ②. (Press the shaded area down with your fingers when replacing connector ① so as not to damage the printed circuit board. When attaching connector ①, be sure to support underneath the circuit board with your fingers.)
- (3) Remove the three screws ① of the drum assembly, then remove the drum assembly upwards. (Be sure not to damage the head tips during this procedure).
- (4) Remove the two screws ②, from the reverse side of the chassis.
- (5) Slide and remove the S slant base Sub assembly from the chassis.
- (6) Replace the S slant base Sub assembly and mount it into position by following the above procedure in reverse.

Note: The procedure for replacing the TU slant base Sub assembly is the same as that for removing the S slant base Sub assembly.



Reverse Side of Chassis

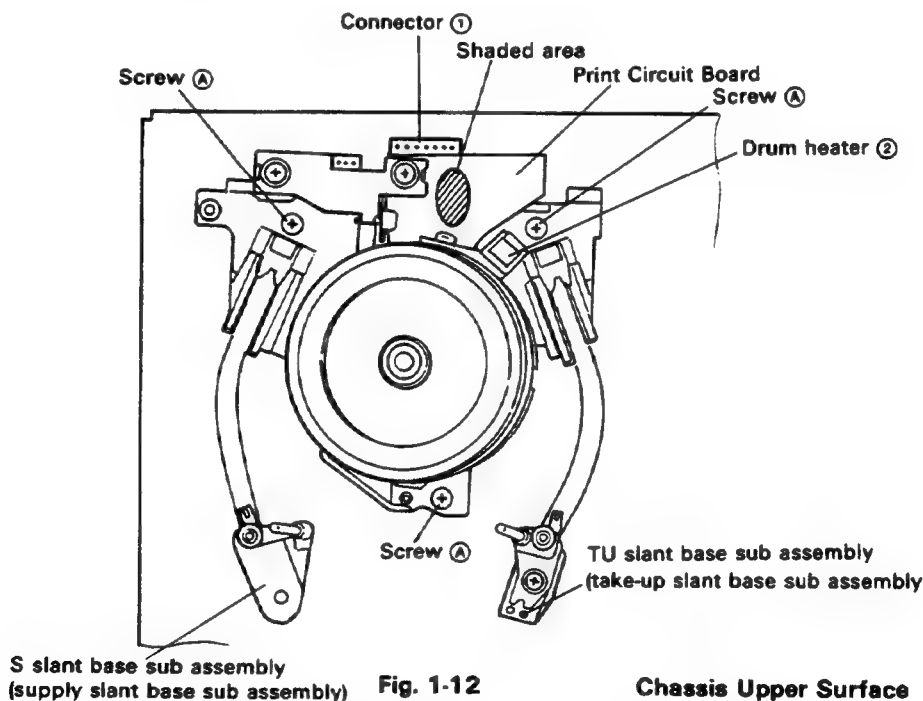


Fig. 1-12

Chassis Upper Surface

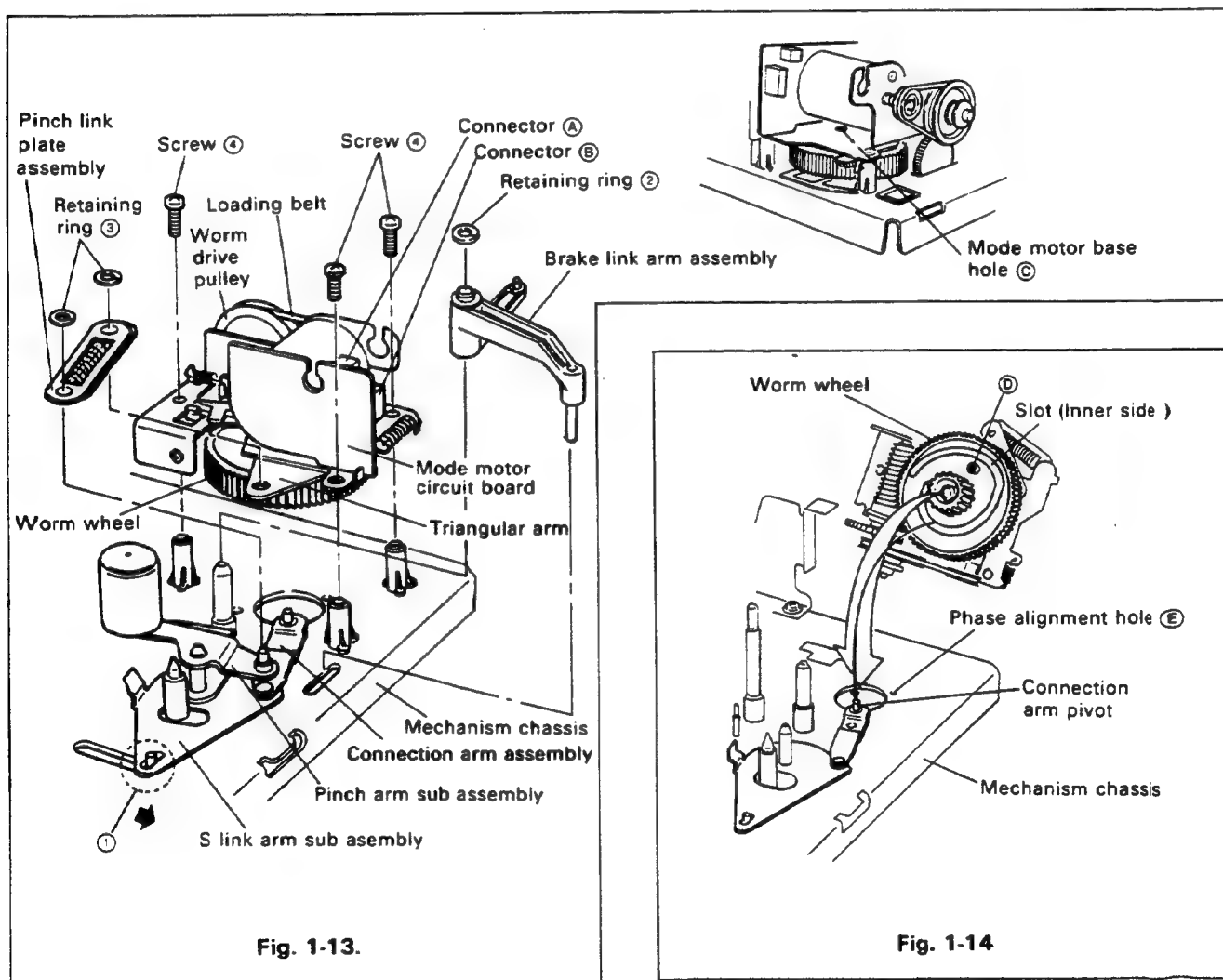
1-14. ENTIRE MODE CAM ASSEMBLY (Figure 1-13, 1-14)

- (1) Remove the loading belt of the entire mode cam assembly. Rotate the worm drive pulley by hand so that the ① part of the S link arm assembly comes as far to the right as possible as shown in Fig. 1-13. (This position is the same as for the FF or the REW mode.) Remove connectors ① and ② of the mode motor circuit board. Next, remove the wires going through the groove of the circuit board. (During this procedure, be sure to remove the connectors of the ACE head first.)
- (3) Remove retaining ring ②, and then remove the brake link arm assembly.
- (4) Remove retaining rings ③, then remove the pinch link plate assembly.

- (5) Remove three screws ④, then remove the entire mode cam assembly upwards.
- (6) Replace the entire mode cam assembly and mount it into position by following the above procedure in reverse.

Notes:

1. When attaching the mode motor assembly on the chassis, first align the mode motor worm wheel hole ① with the mode motor base hole ② by rotating the worm drive pulley.
2. Attach the mode motor assembly so that the ① part of the S link arm assembly comes as far to the right as possible. At this time, be sure to confirm that the hole ③ on the chassis, and holes ② and ③ described above are in alignment.



1-15. CAPSTAN MOTOR (Figure 1-15)

- (1) Remove retaining ring ①, and then remove the brake link arm assembly.
- (2) Remove retaining rings ② and ③, then remove the pinch arm sub assembly upwards.
- (3) Working from the reverse side of the chassis, remove screws A and B, then remove the supporting plate.
- (4) Remove the drive belt, then remove the connector from the capstan motor circuit board. Remove screws C, D and E.
- (5) Remove the capstan motor.
- (6) Replace the capstan motor and mount it into position by following the above procedure in reverse. During this operation, care should be taken not to damage or magnetize the capstan shaft.

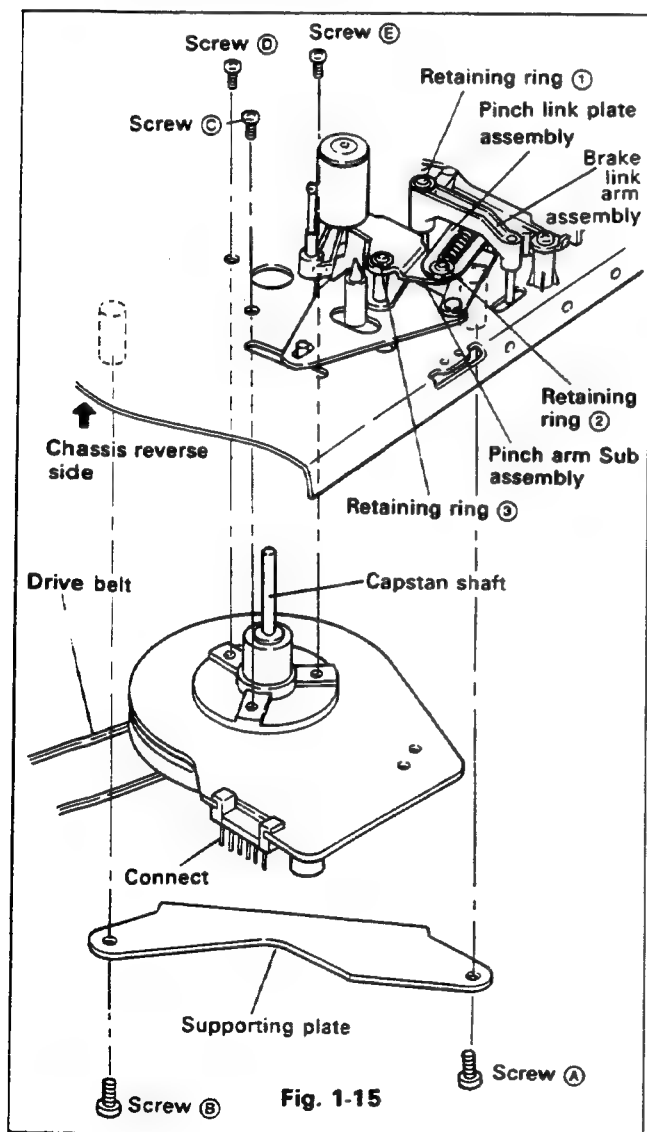


Fig. 1-15

1-16. PINCH ARM SUB ASSEMBLY (Figure 1-16)

- (1) Remove retaining ring ①, and then remove the brake link arm.
- (2) Remove retaining rings ②, then remove pinch link plate assembly ③.
- (3) Remove retaining ring ④ and then remove the pinch arm Sub assembly upwards.
- (4) Replace the pinch arm Sub assembly and assemble it into position by following the above procedure in reverse.

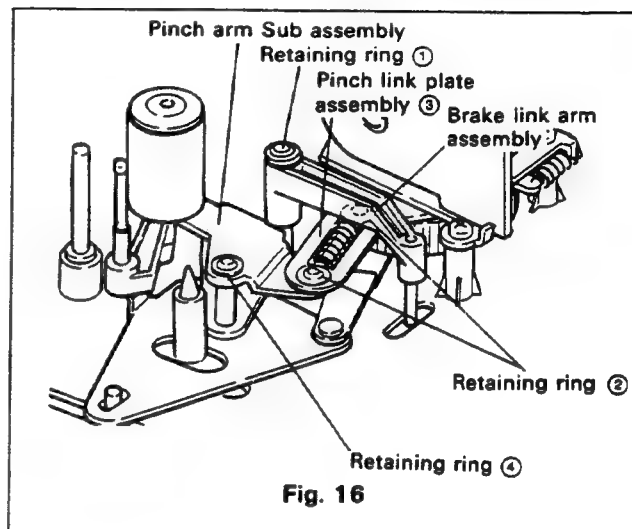
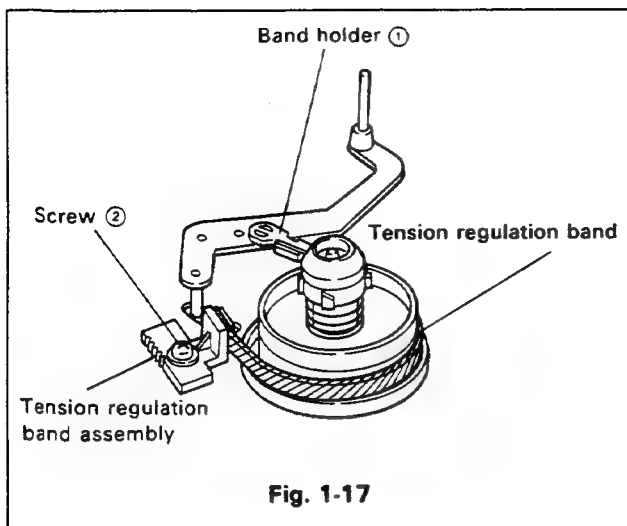


Fig. 16

1-17. TENSION REGULATION BAND ASSEMBLY (Figure 1-17)

- (1) Remove band holder ① of the tension regulation band assembly from the tension regulation arm assembly. Next, remove screw ② and remove the tension regulation band assembly. (Fig. 1-17)
- (2) Exchange the tension regulation band assembly with a new replacement and mount it into position by following the above procedure in reverse.
- (3) Adjust the tension regulation arm assembly according to the following procedure.

CAUTION: Excessive pressure on the lever during band holder replacement could bend it out of shape.

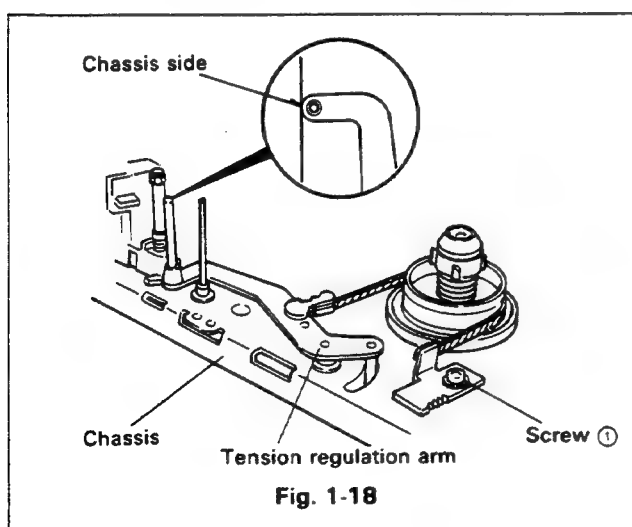


1-18. ADJUSTING THE TENSION REGULATION ARM POSITION (Figure 1-18)

- (1) With the cassette housing removed, activate the play mode.
- (2) Adjust screw (1) so that the left end of the tension regulation arm comes in alignment with the chassis side, secure it firmly as shown in Fig. 1-18.

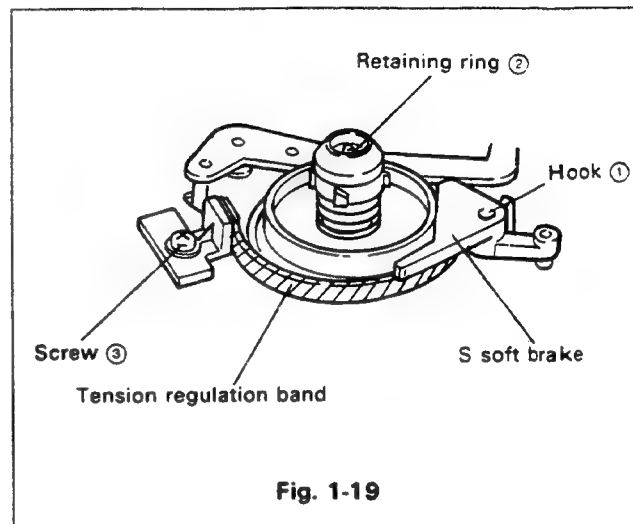
Note:

If back tension is incorrect, check the tension pole position. Use the back tension cassette gauge and confirm a value of between 17 and 32 gcm. If necessary, replace the tension arm spring or tension band and readjust the tension pole position.



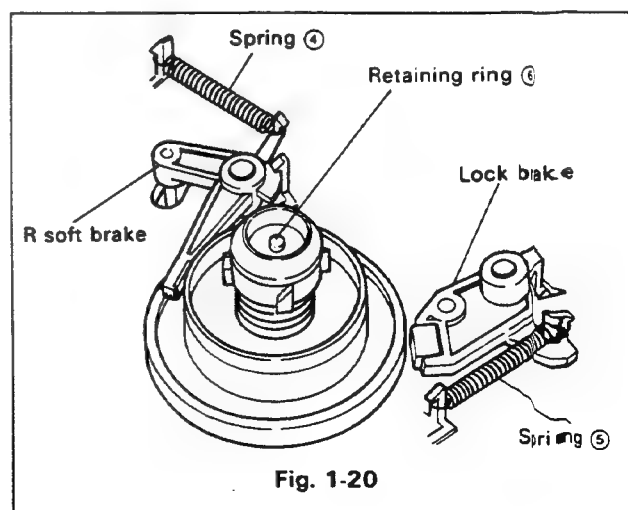
1-19. SUPPLY REEL DISK (Figure 1-19)

- (1) Release the S soft brake upwards from hook (1).
- (2) Remove the retaining ring from the reverse side of the tension regulation arm, then remove screw (3) and tension regulation band.
- (3) Remove retaining ring (2), then remove the supply reel disk.
- (4) Replace the reel disk and mount it into position by following the above procedure in reverse.



1-20. TAKE-UP REEL DISK (Figure 1-20)

- (1) Remove spring (4), then remove the R soft brake upwards.
- (2) Remove spring (5), then remove the lock brake upwards.
- (3) Remove retaining ring (6), then remove the take-up reel disk.
- (4) Replace the reel disk and mount it into position, by following the above procedure in reverse.



1-21. ADJUSTMENTS WHEN REPLACING THE SUPPLY AND TAKE-UP REELS (FIGURE 1-21)

Height adjustment of reel disk (height confirmation of supply and take-up reel disks)

Set the Master Plane B Jig (J-13) on the chassis. (Fig. 1-21-1)

Next, place the Height Gauge BM-2 Jig (J-14) in the positions indicated by the two arrows in Fig. 1-21-1. Slide as shown in Fig. 1-21-2, and verify that the upper surface of the reel disk slides over the A surface of the Height Gauge BM-2 Jig (J-14) and not over the B surface of the Height Gauge BM-2 Jig (J-14).

Note: When checking the height of the supply reel disk, place the Master Plane B Jig (J-13) so that the "S" mark of the Height Gauge BM-2 Jig (J-14) faces upwards.

When checking the height of the take-up reel disk, place the Master Plane B Jig (J-13) so that the "TU, R" mark of the Height Gauge BM-2 Jig (J-14) faces upwards.

If reel disk is outside this range, use polyester washers to make the required adjustments (Fig. 1-21-3).

Part numbers of polyester washers for adjustment

16628731 thickness 0.5 mm

16288001 thickness 0.13 mm

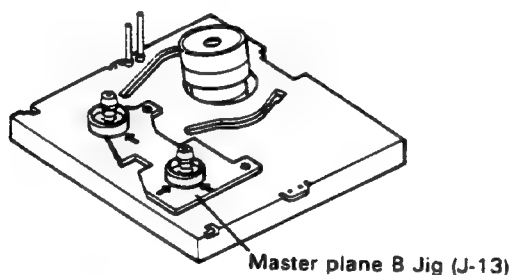


Fig. 1-21-1

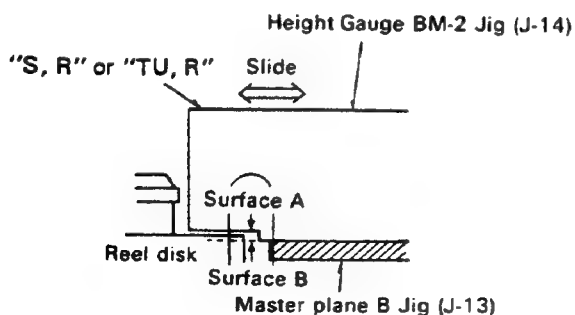


Fig. 1-21-2

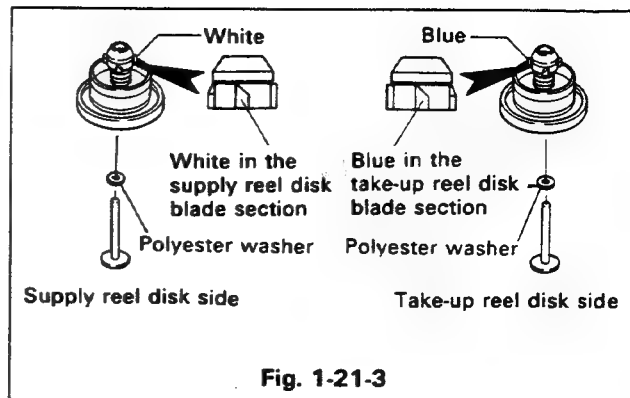


Fig. 1-21-3

1-22. TENSION REGULATION ARM ASSEMBLY (Figure 1-22)

- (1) Remove screw ①, then remove the tension regulation band assembly from the tension regulation arm assembly.
- (2) Remove retaining ring ② from the reverse side of the chassis.
- (3) Remove the tension regulation arm assembly upwards.
- (4) Replace the tension regulation arm assembly and mount it into position by following the above procedure in reverse.

Notes:

1. When installing the tension regulation arm assembly into place, pin A should fall into position C as shown in Fig. 1-22.
2. Adjust the position of the tension regulation arm by referring to Item 1-18.

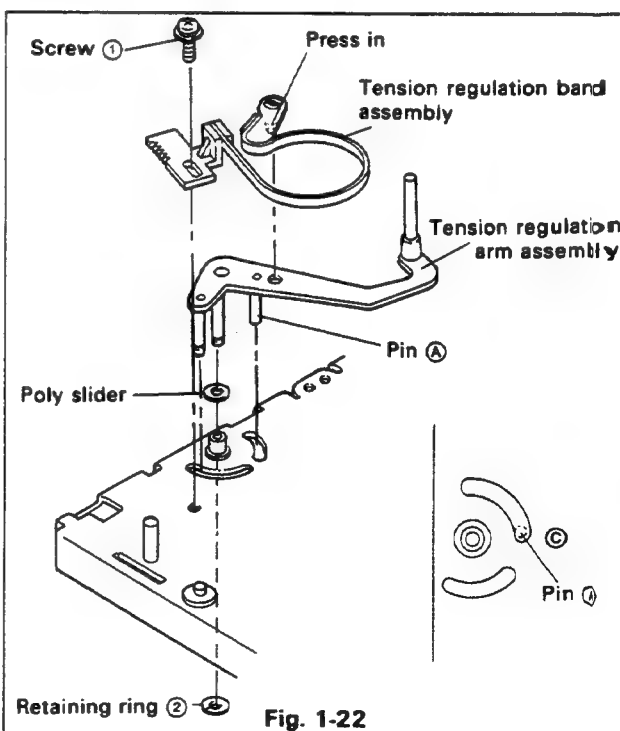


Fig. 1-22

1-23. MEASURING AND CHECKING THE FWD REEL TORQUE (Figure 1-23)

- (1) Remove the cassette housing and short TP101 and TP102 of the S/S/V circuit board with a clip. (Refer to Fig. 1-5.)
- (2) Activate the FWD mode.
- (3) Set the torque gauge on the take-up reel disk base and measure the torque.
- (4) FWD torque rating: $90 \text{ gcm} \pm 15 \text{ gcm}$.
- (5) FF, REW torque rating: more than 400 gcm .
- (6) REV torque rating: $170 \text{ gcm} \pm 25 \text{ gcm}$.

1-24. MEASURING AND CHECKING THE BRAKING TORQUE (Figures 1-23, 1-24, 1-25)

Be sure to carry out the following measurements after the brake arm (R),(L) has been replaced.

- (1) Remove the cassette housing.
- (2) Keep the VCR in the FF mode and unplug the AC cord.
- (3) Press the lock arm of the mode cam assembly in the direction of the arrow.

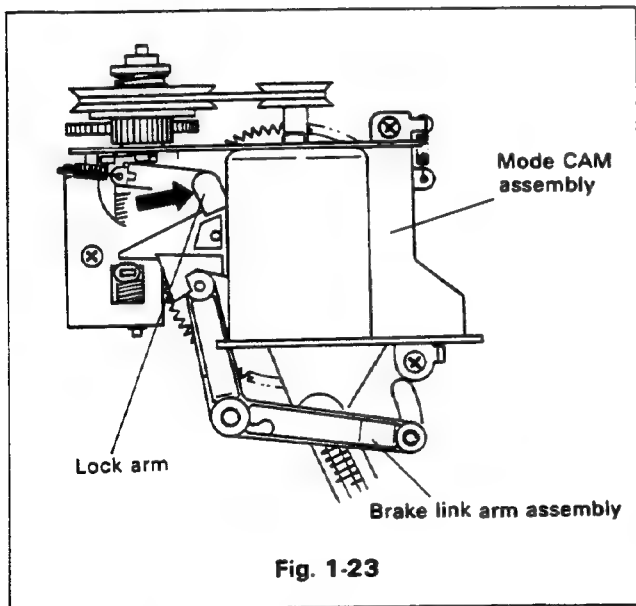


Fig. 1-23

- (4) Before measuring the torque of the brake arm (L), lightly push the S soft brake in the direction indicated by the arrow, then release the tension regulation band from the reel disk.
- (5) Place a torque meter on the S reel disk. Grasping the torque meter lightly, turn it clockwise, and read out the value when the meter face plate begins to move along together with the meter needle. Check that this value falls between $250 \sim 500 \text{ gcm}$.

- (6) Using the same procedure as above, lightly grasp the torque meter, turn the gauge counterclockwise, and read out the value when the meter face plate begins to move along with the meter needle. Check that this value falls between $50 \sim 180 \text{ gcm}$.

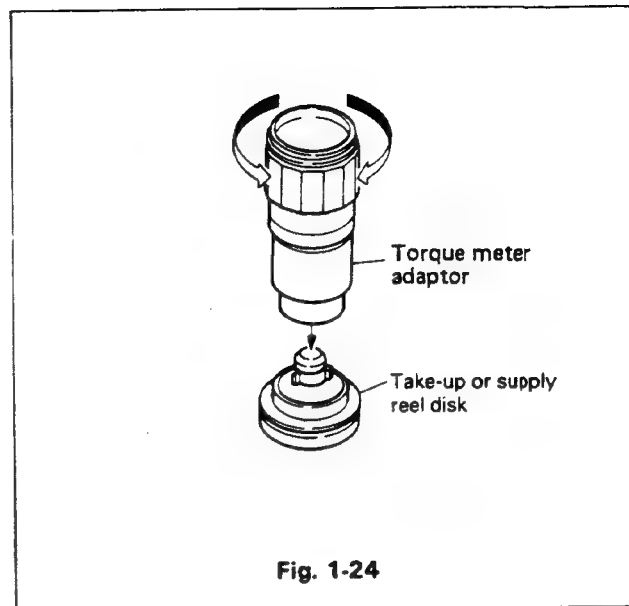


Fig. 1-24

Notes:

1. When measuring the brake arm (R) torque, lightly push the TU soft brake so that it releases from the reel disk, following the same procedure as when measuring the torque of the brake arm (L).
2. If the measured value deviates excessively from the appropriate values, carefully check the springs, etc.

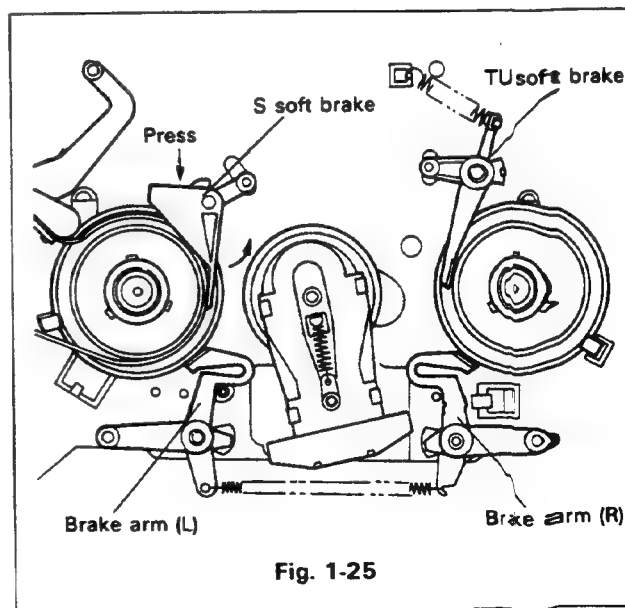


Fig. 1-25

2. CHECKING AND ADJUSTING THE TAPE PATH

Because the tape transport system is precision-adjusted at the factory prior to product shipment, there is usually no need to readjust the system. Note, however, that after

extensive use or when any tape transport system parts have been replaced, it becomes necessary to check and adjust the tape path and tape transport system.

2-1. TAPE PATH MECHANISM (Figure 2-1)

The VHS-system tape path is characterized by upper rotation with the video head to wind the tape around the drum in an M-shaped form.

To wind the tape accurately around the tilted drum, the tape is guided by a slanted guide posts (thrust poles) mounted to the left and right of the drum. The tape level during operation is determined by the pair of guide rollers.

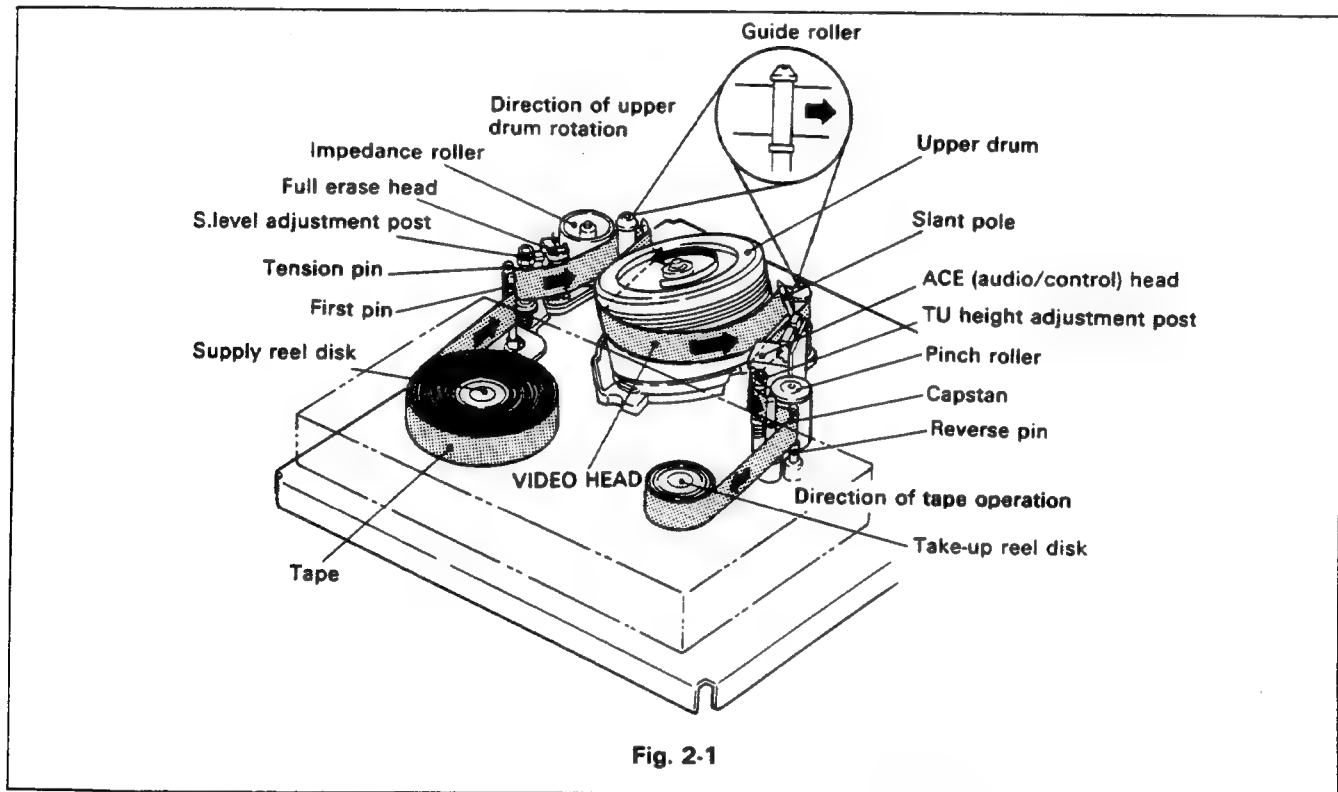


Fig. 2-1

The tape is always wound around the cassette through the first pin, tension pin, and S.level adjustment post via the path indicated by the arrows in Fig. 2-1.

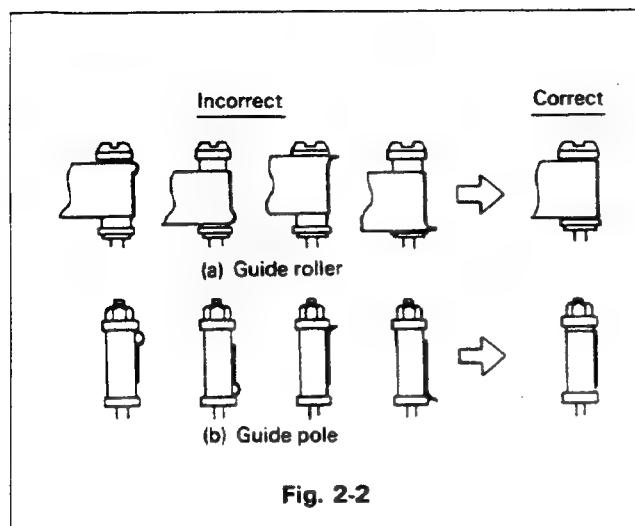
In addition, the impedance roller absorbs minor vibration in the direction of tape operation to eliminate picture jitter and voice wow and flutter.

The reverse pin controls the level of the tape fed from the take-up reel side before it reaches the capstan (pinch roller) when the tape is reversed in the REV mode.

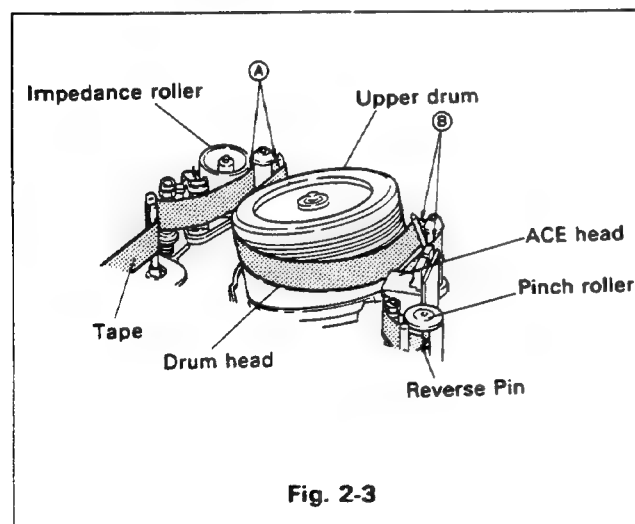
2-2. CHECKING THE TAPE TRANSPORT SYSTEM (Figures 2-2, 2-3)

- (1) Use a E-120 cassette tape.
- (2) Use a cleaning cloth soaked in cleaning solution (isopropyl alcohol) to clean the tape transport system parts (tape guide, tape contact surface of drum, capstan shaft, pinch roller, surface of ACE and FE heads, etc.).
- (3) Use a cassette tape to check the following points.
- (4) Operate the PLAY and STOP modes a few times to ensure proper operation.

- (5) In the PLAY, CUE, and REV modes, observe whether the tape is being wrinkled or not on the supply guide roller, supply guide pole, take-up guide roller, take-up guide pole and reverse pin. If the tape is being wrinkled, make the necessary adjustments by referring to figure 2-2 and performing the adjustments described in Item 2-3.



- (6) In the PLAY, CUE and REV modes, confirm that tape undulation does not occur at sections A and B shown in Fig. 2-3. To check section A, remove the impedance roller from the tape.
- (7) Repeat the REV and CUE modes a few times alternately to check that the tape does not move up and lower at the lower area of the ACE head.



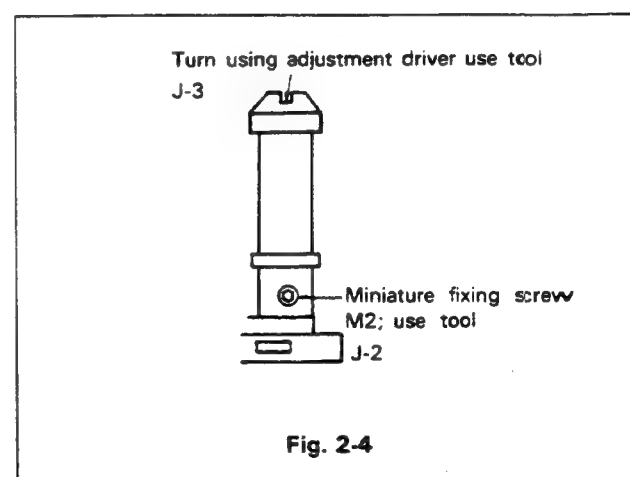
2-3. ADJUSTING THE TAPE TRANSPORT SYSTEM (Figures 2-4, 2-5, 2-6)

Only make these adjustments if a malfunction has been detected during the checking described in Item 2-2.

Note: Be sure to carry out intercompatibility adjustments after the tape transport system has been adjusted, be sure to make the intercompatibility adjustments to ensure compatibility among parts.

2-3-1 Adjusting the guide roller height (vertical pole height adjustment)

- (1) As shown in Fig. 2-4, loosen the fixing screws of the supply guide roller and take-up guide roller (until the guide rollers can be turned easily by using the adjustment screwdriver).



- (2) Insert a cassette tape, and activate the PLAY mode.
- (3) Rotate the supply guide roller with the adjustment screwdriver (J-3) to tighten tape tension at the upper and lower flanges.
- (4) Adjust the take-up guide roller according to the same procedure.

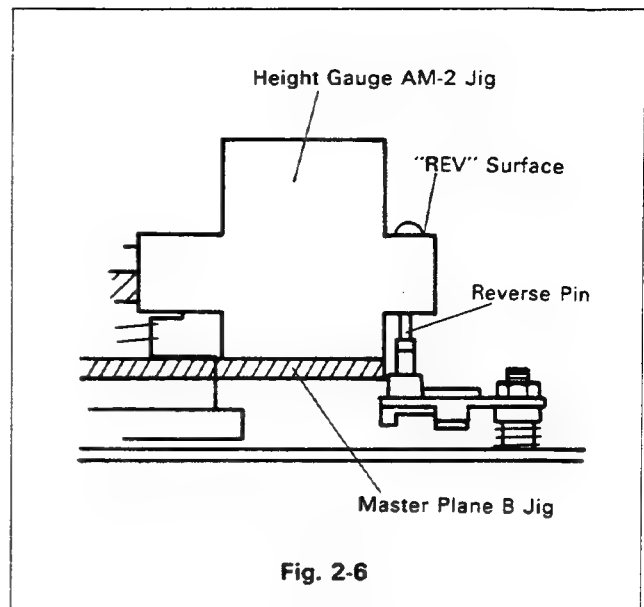
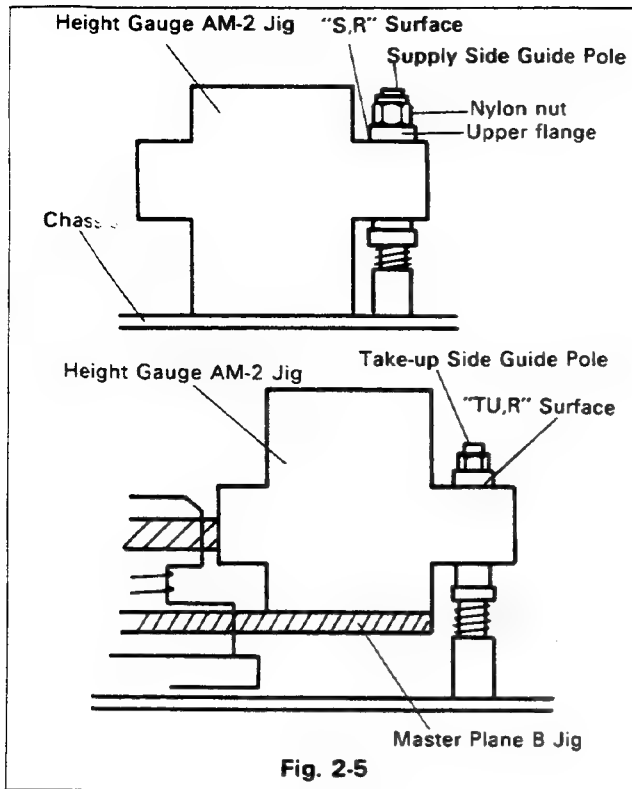
2-3-2 Adjusting the guide pole and reverse pin heights

Note: When adjusting the take-up guide pole height, be sure to remove the cap.

[A] Adjusting the guide pole and reverse pin heights

- (1) To adjust the height of supply-side guide pole, set the Height Gauge AM-2 Jig (J-12) on the chassis as shown in Fig. 2-5 and rotate the nylon nut to adjust to the height of the lower surface of the upper flange.
- (2) To adjust the height of take-up side guide pole, place the Master Plane B Jig (J-13) on the chassis, and place the Height Gauge AM-2 Jig (J-12) on J-13 with the side marked "TU, R" facing up as shown in Fig. 2-5.

Then rotate the nylon nut to adjust to the height of the lower surface of the upper flange.



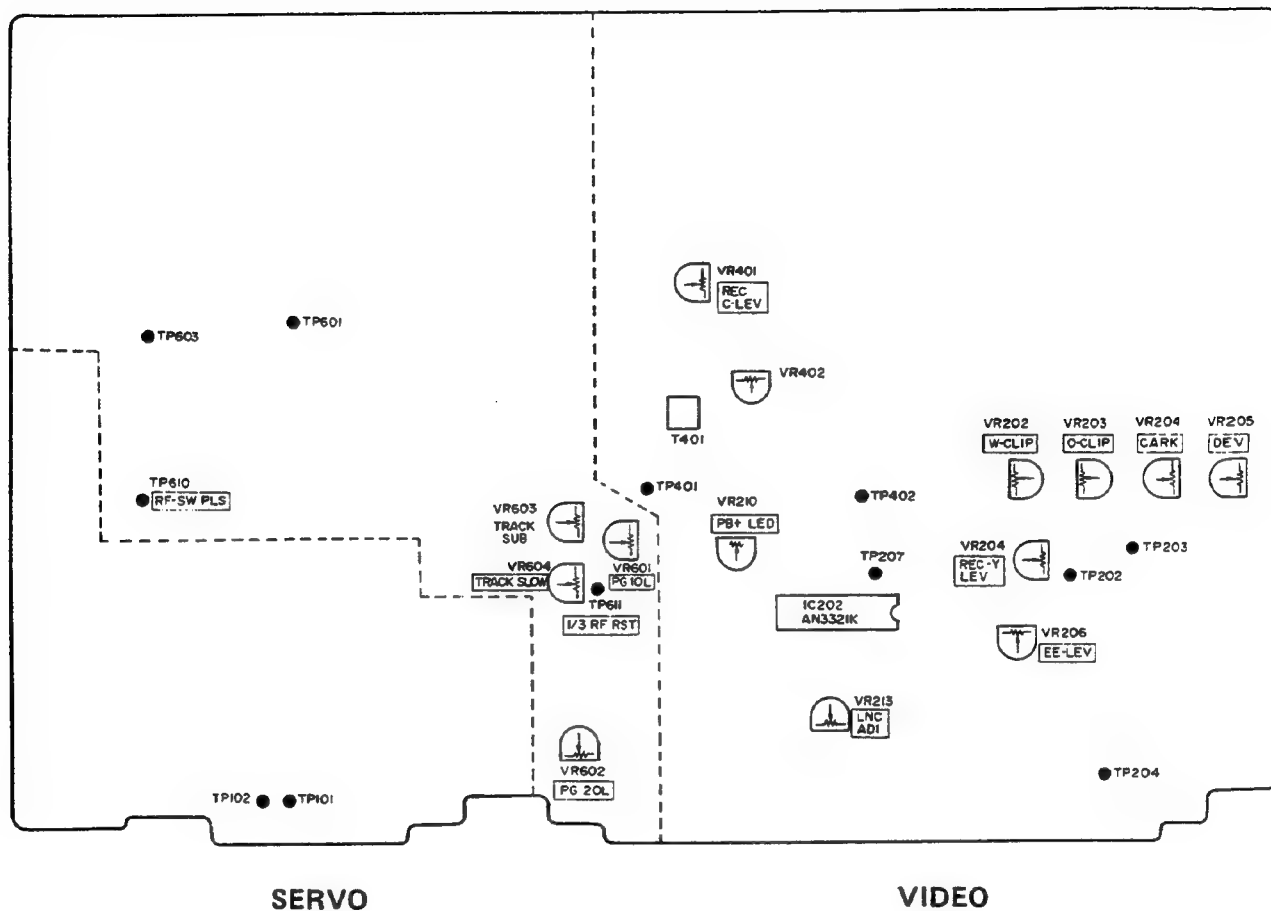
- (3) To adjust the height of the reverse pin, place the Master Plane B-2 Jig (J-13) on the chassis, and place the Height Gauge AM-2 Jig (J-12) on J-13 with the side marked "REV" facing up as shown in Fig. 2-6. Then rotate the nylon nut to adjust to the height of the lower surface of the upper flange.

[B] Precisely adjusting the supply and take-up guide pole heights

- Insert a E-120 cassette tape, and activate the PLAY mode.
- (2) As shown in Fig. 2-2, use the box driver (J-5) to precisely adjust the guide pole height and eliminate tape wrinkling on the pole.
- (3) If tape wrinkling cannot be eliminated by the above adjustment, check the supply reel disk height, tension pin, and other parts.

3. INTERCOMPATIBILITY ADJUSTMENTS

Because these adjustments have a significant effect on the picture quality in the respective modes, as well as affecting the degree of tape intercompatibility, be sure to perform the following procedures very carefully and thoroughly.

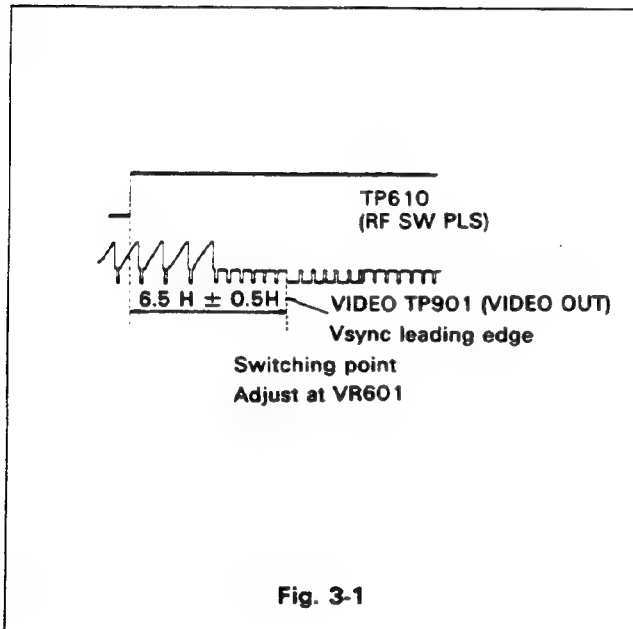


* This circuit board is viewed from component side.

3-1. CHECKING THE FM WAVEFORMS

3-1-1 Check 1: Checking the playback switching point

- (1) Play the alignment tape (MH-2).
- (2) Connect channel 1 of the oscilloscope to TP610 of the S/S/V circuit board.
Connect channel 2 of the oscilloscope to TP901 of the jack terminal circuit board.
- (3) Confirm that the interval from the RF switching pulse to the Vsync leading edge is at $6.5H \pm 0.5H$.
- (4) If not at $6.5H \pm 0.5H$, adjust VR601 on the S/S/V circuit board to set the interval at $6.5H \pm 0.5H$.



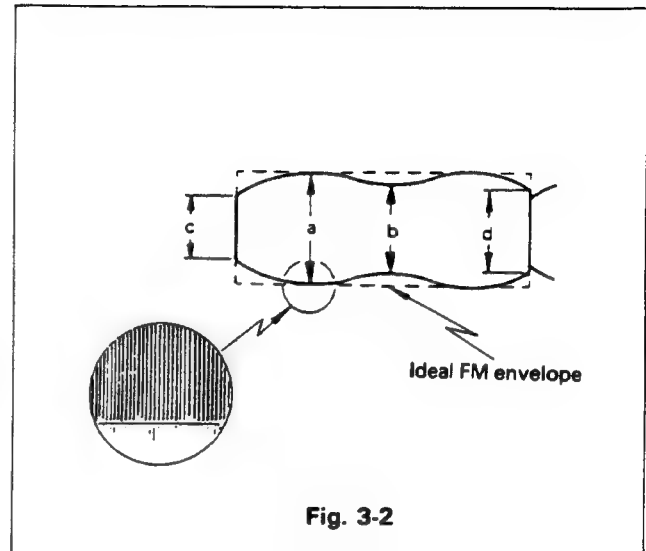
3-1-2 Check 2: Checking the FM waveform

- (1) Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board. Also connect TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board.
- (2) Play back the MH-2 alignment tape.
- (3) Turn the tracking knob to set the FM waveform output for the maximum level.
- (4) Read the FM waveform level (a) as shown in Fig. 3-2. If the waveform is a sawtooth wave, read the level at a wave section where the sawtooth waves are relatively uniform.
- (5) Read the FM waveform level (b) as shown in Fig. 3-2, and check the following:

$$\frac{b}{a} \cong 0.8$$

- (6) Read the FM waveform levels (c) (drum entrance) and (d) (drum exit), and check the following:

$$\frac{c}{a} \cong 0.7 \quad \frac{d}{a} \cong 0.7$$

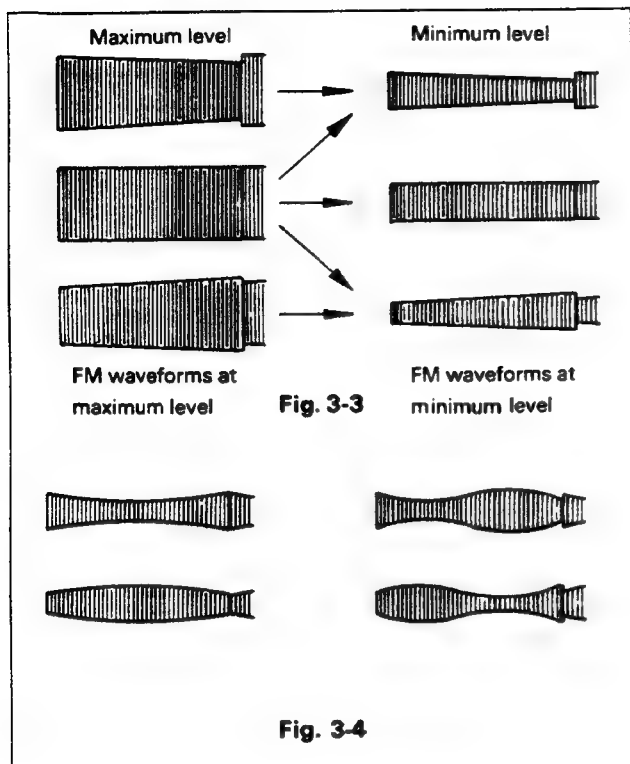


- Notes:**
1. Read the minimum levels of (b), (c), and (d).
 2. If the level values are within the above ranges, proceed to the following "Check 3-2".
 3. If any malfunction is detected, follow the coarse FM waveform adjustment procedure described in Item 3-2.

3-1-3 Check 3

- 1) As previously mentioned in Check 2 (connect the oscilloscope and play back the tape), turn the tracking knob while observing the FM waveforms. Confirm that the waveforms change linearly as shown in Fig. 3-3. When this linear change is confirmed, proceed to the ACE head height and azimuth adjustments described in Item 3-4.

- (2) When various waveforms are observed as shown in Fig. 3-4, it is necessary to make the precise adjustments described in Items 3-3.

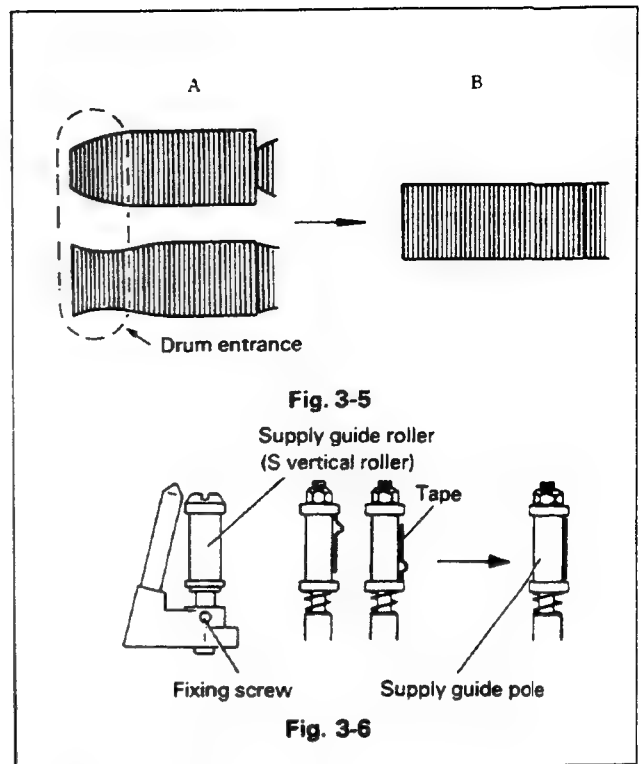


3-2. COARSE ADJUSTMENT OF FM WAVEFORMS (Preliminary adjustments)

- (1) Use the hexagonal screwdriver (J-2) to loosen the fixing screws of the supply guide and take-up guide rollers so that the guide rollers can be adjusted.
- (2) Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board. Also connect TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board to the oscilloscope as an external synchronization terminal.
- (3) Play back the MH-2 alignment tape.

3-2-1 Drum entrance side

- (1) While observing the waveforms on the oscilloscope, turn the tracking knob to set the FM waveform for the maximum level.
- (2) If the FM waveforms look like A in Fig. 3-5, adjust the supply guide roller until the waveforms look like B in Fig. 3.5.



- Notes:**
1. Gently tighten the fixing screws so that the guide roller height adjustment screw can rotate freely. (Adjust within the proper range by using tool J-3).
 2. Make small guide roller adjustments to avoid damaging the MH-2 alignment tape.
 3. While observing the waveforms, check for any tape wrinkling at the guide poles and leading edge of the drum.

3-2-2 Drum exit

- (1) Adjust the FM waveforms by using the same procedure as used for drum entrance adjustment (by turning the take-up guide roller). If the waveforms look like C in Fig. 3-7, adjust the take-up guide roller until the waveforms look like D.

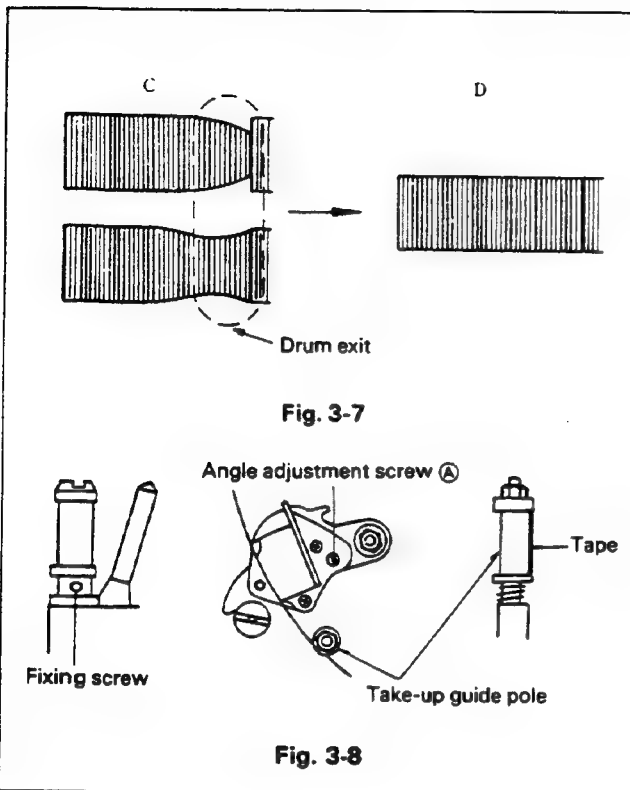


Fig. 3-7

Fig. 3-8

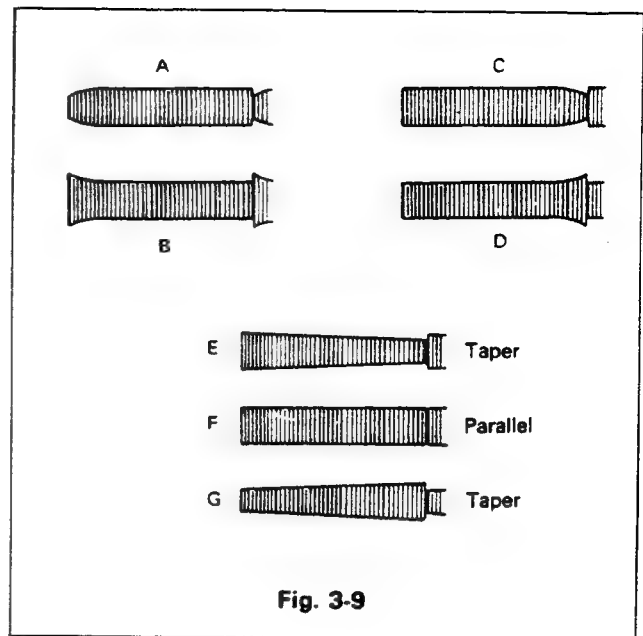


Fig. 3-9

Note:

After completing these adjustments, confirm that the tape transport operation is functioning properly, and carefully tighten the fixing screws.

3-3. FINE ADJUSTMENT FOR INTER-COMPATIBILITY

- (1) Connect the oscilloscope to TP402 of the S/S/V circuit board. Also connect TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board to the external synchronization terminal of the oscilloscope. Playback the MH-2 alignment tape. While observing the waveforms on the oscilloscope, turn the tracking knob to set the FM waveforms for minimum levels.
- (2) If the waveforms look like A or B in Fig. 3-9, minimize the FM waveform output by carefully adjusting the supply guide roller until the waveforms look like E, F, or G in Fig. 3-9.
- (3) If the waveforms look like C or D in Fig. 3-9, minimize the FM waveform output by carefully adjusting the take-up guide roller until the waveforms look like E, F, or G in Fig. 3-9.
- (4) While turning the tracking knob to adjust the maximum and minimum levels of FM waveform output, adjust the supply and take-up guide rollers until the waveforms look like E, F, or G in Fig. 3-9.

3-4. ACE HEAD ADJUSTMENT

If the height of the audio/control head is incorrect, a poor SN ratio will result when reproducing prerecorded tapes. Refer to Fig. 3-10.

- (1) Connect channel 1 of the oscilloscope to the AUDIO OUT jack on the rear panel.
- (2) Play back the MH-2 alignment tape and reproduce the 5 KHz audio signal.
- (3) While observing the audio output signal on the oscilloscope, adjust the height adjustment nut (A) shown in Fig. 3-10 to the maximum output level.
- (4) Next, adjust the azimuth adjustment screw (B) to the maximum output level.

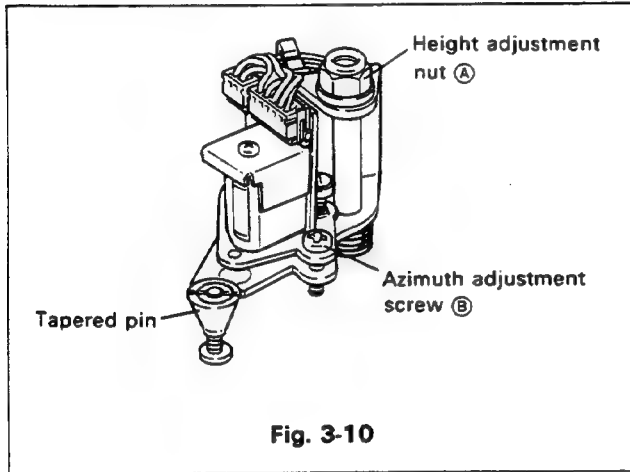


Fig. 3-10

3-5. ADJUSTING THE CTL POSITION

[A] Adjusting subtracking

- (1) Connect channel 1 of the oscilloscope to TP610 of the S/S/V circuit board. Also, connect channel 2 of the oscilloscope to TP603 of the S/S/V circuit board.
- (2) Play back the MH-2 alignment tape.
- (3) Adjust VR603 so that the leading edge of CTL PLS is synchronized with the leading edge of the RF switching pulse as shown in Fig. 3-11.

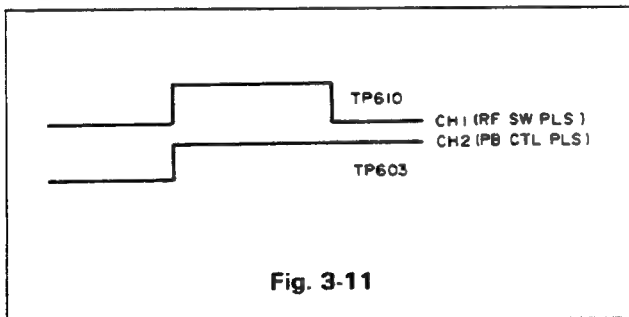


Fig. 3-11

Note: The tracking knob must be set in the center position.

[B] Adjusting the ACE head position

- (1) Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board, and channel 2 of the oscilloscope to TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board.
- (2) Play back the MH-2 alignment tape, set the tracking knob at the center position, and turn the tapered pin in Fig. 3-10 so that the maximum FM waveform output level is set. Play back the MH-2 alignment tape, and confirm that the maximum FM waveform output level is obtained with the tracking knob set at the center position.

3-6. FINAL TESTING AND CHECKING

- (1) Connect channel 1 of the oscilloscope to TP610 of the S/S/V circuit board. Connect channel 2 of the oscilloscope to TP901 of the jack terminal circuit board.
- (2) Confirm that the REC timing is $6.5 \text{ H} \pm 1$.
- (3) Record this signal on a blank tape (using a monochrome or stair-step pattern).
- (4) Check the FM waveforms thus recorded on the tape. Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board, and connect channel 2 of the oscilloscope to TP610 of the S/S/V circuit board. Then, play the tape back.
- (5) Confirm that the degree of evenness (a/b) is greater than 0.8, or greater than 0.85 if minor fluctuations occur.

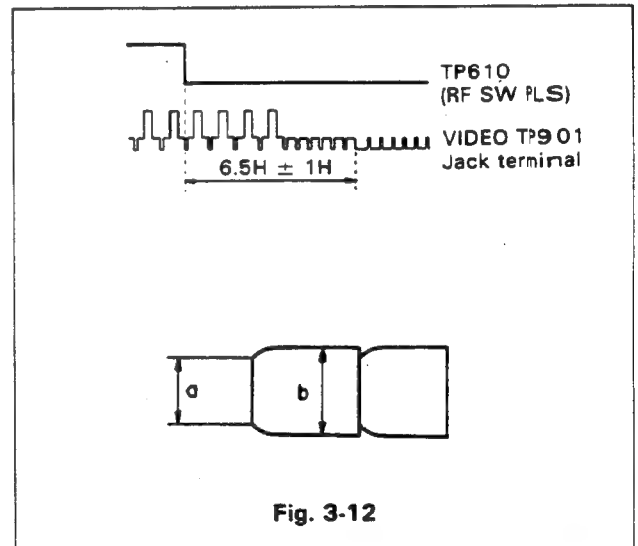


Fig. 3-12

After completing the above test and adjustment procedures, confirm that the tape transport operation is functioning properly, place locking paint on the tapered pin screw.

4. ELECTRICAL ADJUSTMENTS

4-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. Note that these adjustments should only be made after completing all repairs and replacements. Also, do not attempt these adjustments unless the proper equipment is available.

4-1-1 Required test equipment and jig

- | | |
|---|--|
| ① Color TV monitor | ⑤ Audio generator |
| ② Oscilloscope: Wideband | ⑥ Alignment tape (MH-2), and other general electrical tools. |
| ③ Signal generator: Color bar, Stair-step | ⑦ Video tape: E-60, E-120 |
| ④ Frequency counter | ⑧ Digital multimeter or tester |

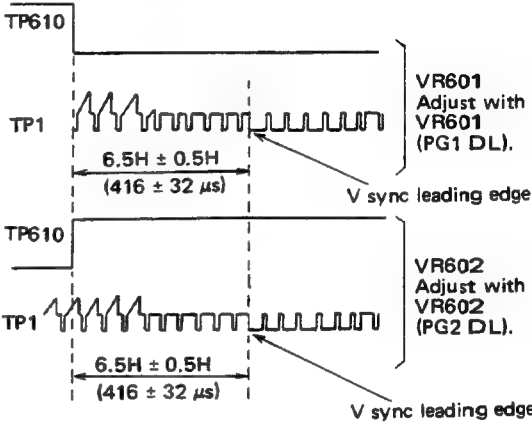
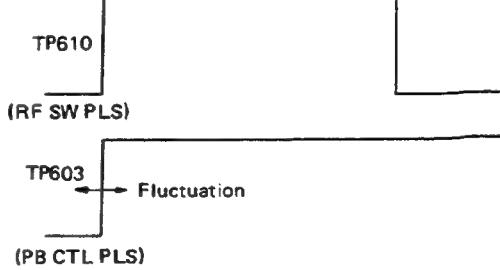
4-1-2 Alignment tape contents

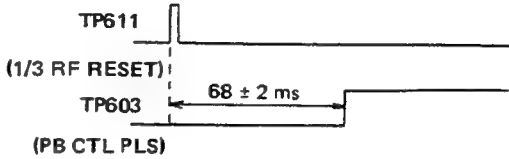
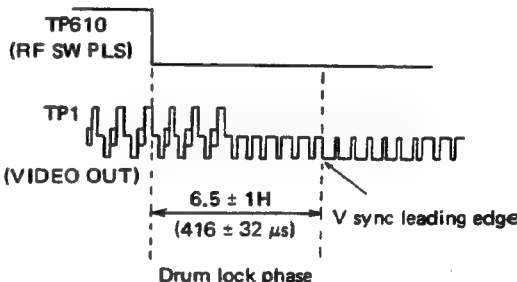
1. MH-2

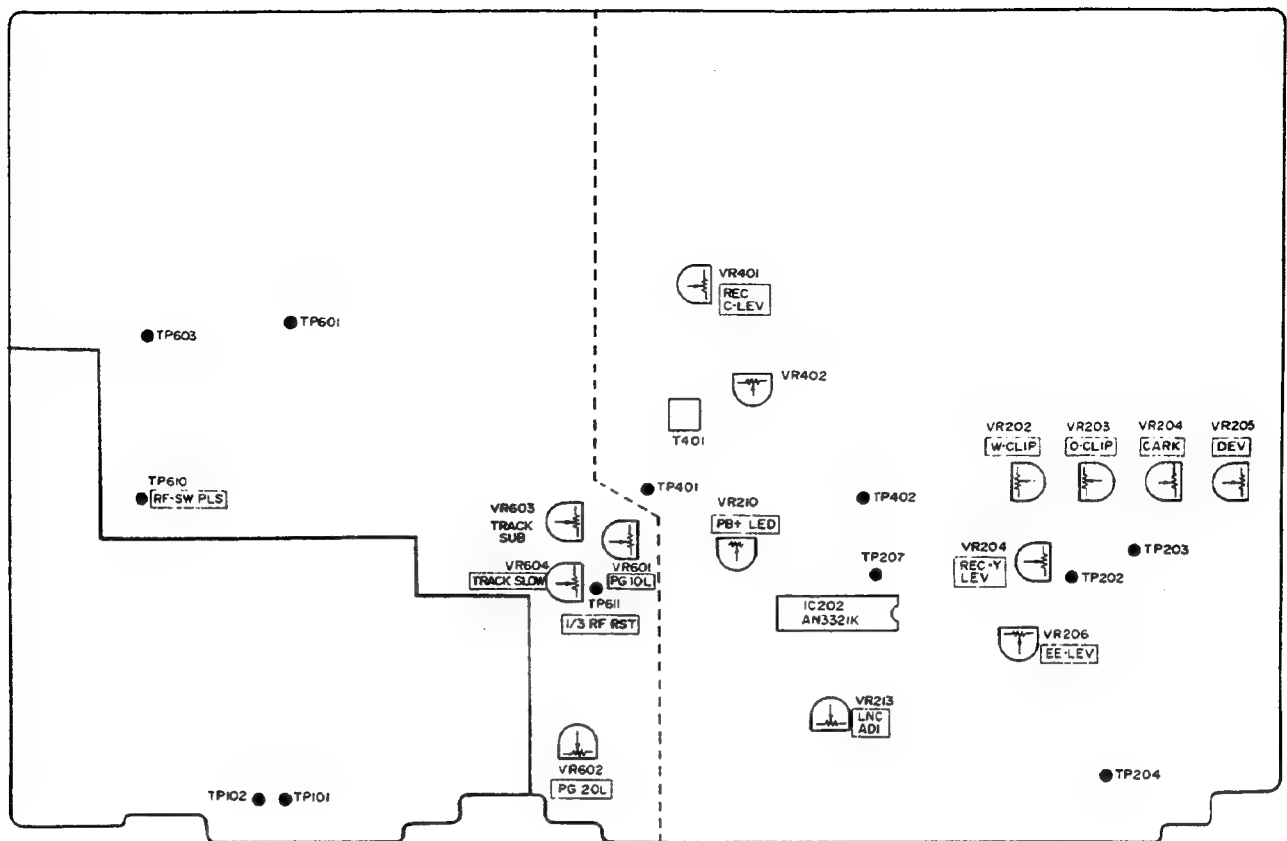
| No. | Playback Time | Video Signal | Audio Signal | Applications |
|-----|---------------|--------------|---------------|--|
| 1 | 10 minutes | Stair-step | 6 kHz | <ul style="list-style-type: none">● Interchangeability checks and adjustments● Servo circuit checks and adjustments● Audio head azimuth adjustment |
| 2 | 5 minutes | (none) | 3 kHz | <ul style="list-style-type: none">● Tape speed checks● Wow and flutter checks |
| 3 | 10 minutes | Color bar | 1 kHz 0 dB | <ul style="list-style-type: none">● Video signal playback circuit checks and adjustments● Audio signal playback circuit checks and adjustments |
| 4 | 3 minutes | RF sweep | (none) | <ul style="list-style-type: none">● Video head resonance adjustments● Marker: 2.0, 4.0, 5.0 MHz (not used) |

Table 4-1 MH-2 contents

4-2. SERVO CIRCUIT (S/S/V board)

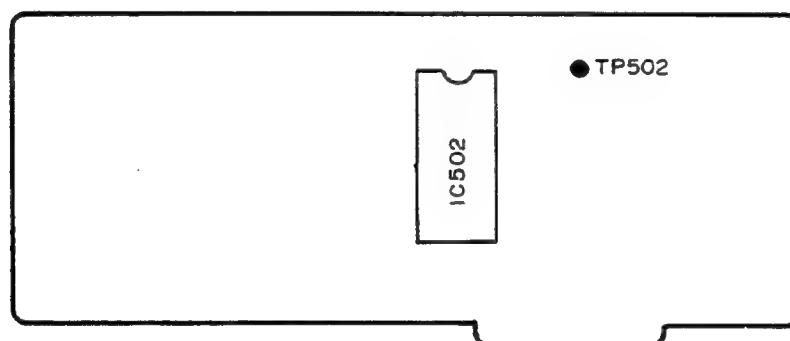
| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Adjustment & Confirmation |
|-----|-----------------------|--|--------------------------------------|---------------|---|
| 1 | Video switching point | TP610 (RF SW PLS) TP1 [on jack terminal] (VIDEO OUTPUT) | VR601 (PG1 DL) VR602 (PG2 DL) | MH-2 P.B. | <p>1. Connect an oscilloscope to TP610 and TP1.</p> <p>2. Play back the alignment tape specified at left, watch the monitor screen, and adjust the tracking VR to the best tracking condition.</p> <p>3. Adjust VR601 and VR602 so that the phase relationship of RF SW PLS with the reproduced video signals will be as shown below.</p>  <p>VR601 Adjust with VR601 (PG1 DL).</p> <p>VR602 Adjust with VR602 (PG2 DL).</p> <p>V sync leading edge</p> |
| 2 | Tracking SUB VR | TP610 (RF SW PLS) TP603 (PB CTL PLS) | VR603 (TRACKING SUB) | MH-2 P.B. | <p>1. Connect an oscilloscope to TP601 and TP603.</p> <p>2. Press the tracking pushbutton to the center click position.</p> <p>3. Play pack MH-2, and adjust VR603 until the waveform has the phase relationship shown below. (Triggering TP610 causes the waveform at TP603 to fluctuate. Adjust to the center of the wave.)</p>  <p>TP610 (RF SW PLS)</p> <p>TP603 (PB CTL PLS)</p> <p>Fluctuation</p> <p>Tracking center adjustment</p> |

| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Adjustment & Confirmation |
|-----|------------------------------|--|------------------------|--|--|
| 3 | Slow SUB tracking VR | TP611 (1/3 RF RESET PLS) TP603 (PB CTL PLS) | VR604 (TR SUB SLOW) | MH-2 P.B. | <ol style="list-style-type: none"> 1. Connect TP611 and TP603 to an oscilloscope. 2. Press the tracking pushbutton to the center click position. 3. Play back MH-2, and adjust VR604 until the waveform has the phase relationship shown below.  |
| 4 | Drum lock phase (REC TIMING) | TP610 (RF SW PLS) TP1 [on jack terminal] (VIDEO OUTPUT) | Check | <ul style="list-style-type: none"> • Color bar • Standard REC mode | <ol style="list-style-type: none"> 1. Connect an oscilloscope to TP610 and TP1. 2. Select the standard REC mode, and check the waveforms at TP610 and TP1 that their phase relationship is as shown below. <p>Note: If a damaged tape is played back, the lock phase will show much deviation during an operation check. If tape damage is slight, check that the center of lock phase deviation meets the relationship shown below.</p>  |



SERVO

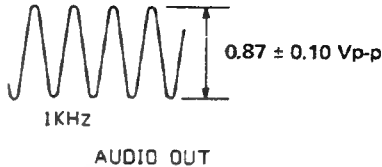
* This circuit board is viewed from component side.

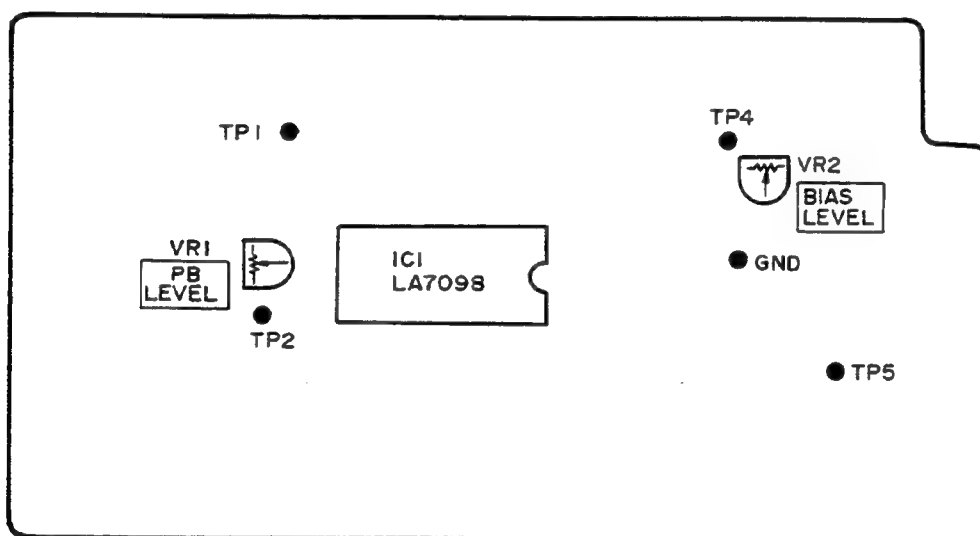


PREAMP

* This circuit board is viewed from component side.

4-3. AUDIO CIRCUIT (AUDIO board)

| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Description and Waveform |
|-----|-----------|-----------------------|--------------------------------|--|--|
| 1 | PB Level | AUDIO Output Terminal | VR1 (P.B LEVEL) of AUDIO board | <ul style="list-style-type: none"> ● Alignment Tape MH-2 ● Play Back | <p>Adjust VR1 so that the output level of the AUDIO output terminal is set to -8 ± 1 dBs. (Oscilloscope display: 0.87 ± 0.10 Vp-p.)</p>  |
| 2 | Head Bias | AUDIO board TP4, GND | VR2 (BIAS LEVEL) | <ul style="list-style-type: none"> ● No signal is input ● SP (2H) REC mode | <p>Adjust VR2 so that the voltage between TP4 ⊕ and GND terminal ⊖ (displayed on the AC millivoltmeter) of the AUDIO board is set to 110 ± 10 mVrms.</p> |



AUDIO

* This circuit board is viewed from component side.

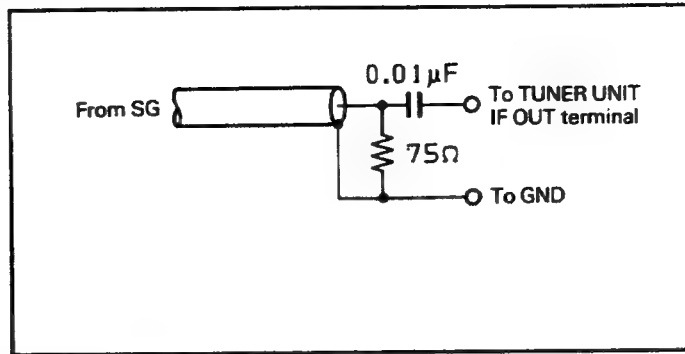
4-4. TUNER/IF CIRCUIT

1

AFT transformer adjustments

- (1) Connect the 38.9 MHz, 80 dB μ unmodulated signal to the IF output terminal of the Tuner Unit, by using the input pad shown below.

Note that no signal is being input to the ANT IN terminal at this time.

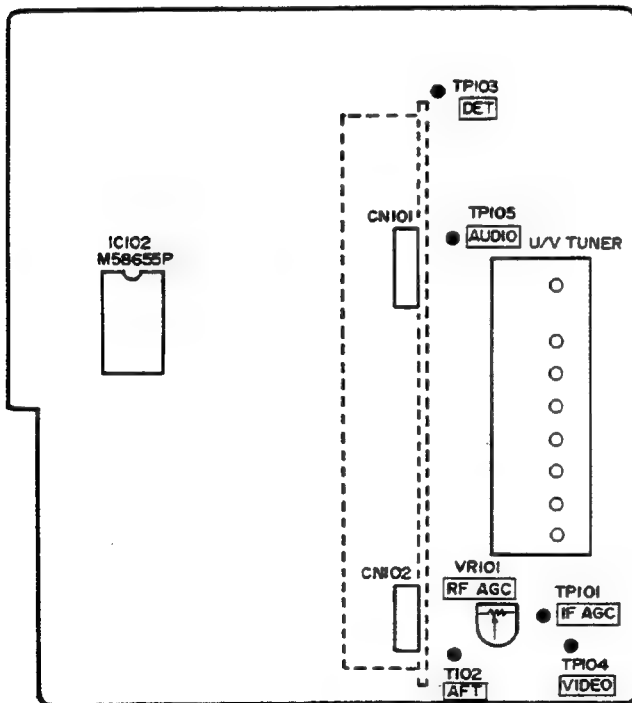


- (2) Connect an oscilloscope to TP102 (AFT).
- (3) Slowly turn T2 (AFT Transformer) to adjust the output voltage of TP102 to 5.0 ± 0.5 VDC at the point where the voltage suddenly fluctuates. (Do not adjust the voltage to 6.0 VDC.)

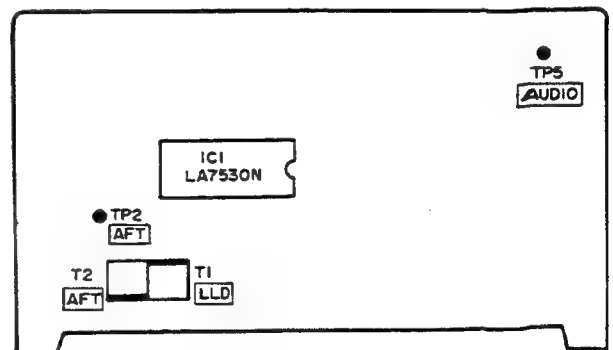
2

RF AGC adjustments

- (1) Input a 58 dB μ RF signal (channel E7) to the ANT IN terminal.
- (2) Connect a digital voltmeter to AGC terminal of the TUNER UNIT, and adjust VR101 (RF AGC) so that the voltage at the AGC terminal is set to 6.5 ± 0.5 VDC.



TUNER

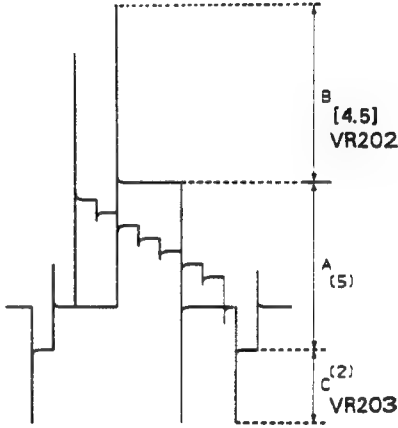



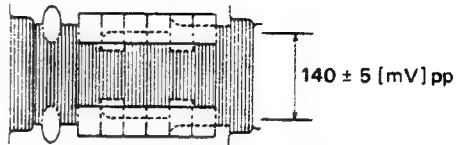
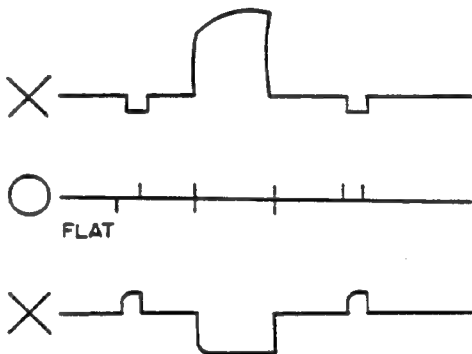
IF

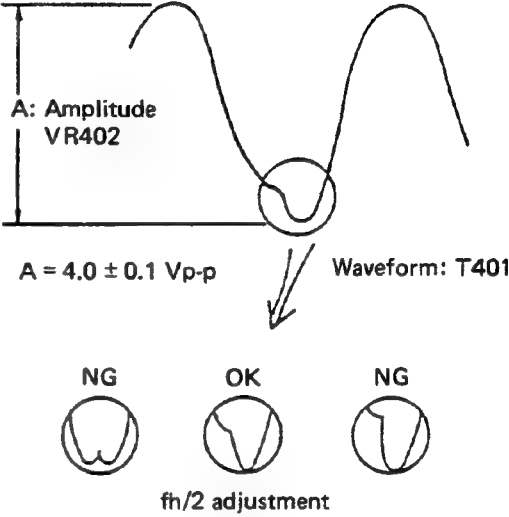
* This circuit board is viewed from component side.

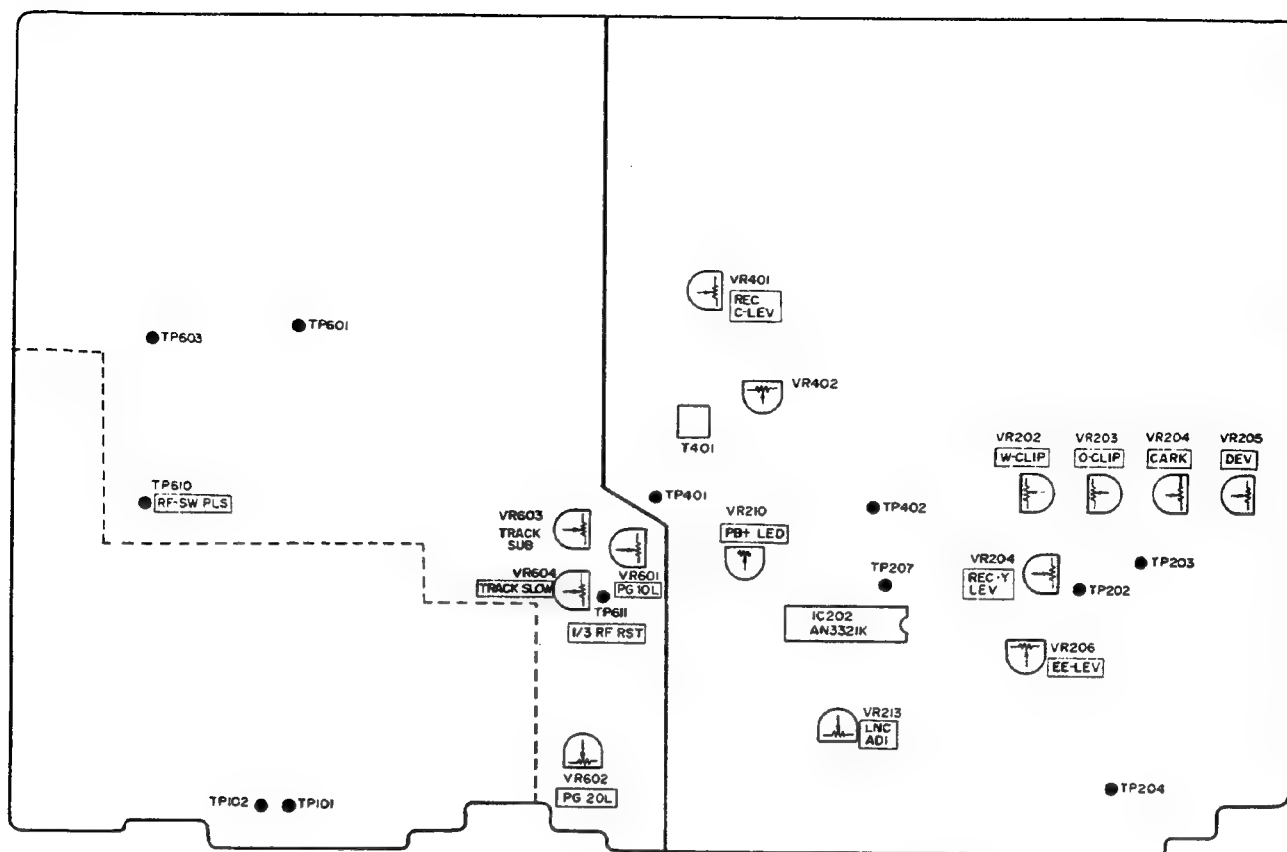
2.

| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Description and Waveform |
|-----|-------------------|---|---|---|--|
| 1 | EE Level | TP901 (Trigger: TP204) of JACK TER- MINAL board | VR206 | Input (VIDEO IN): Color Bar STOP | 1. Input a color bar signal to VIDEO IN. 2. Connect an oscilloscope to TP901. (Terminate VIDEO OUT with 75-ohm impedance.) 3. Adjust VR206 (EE) so that signal issued from sync tip to white peak is set to 1.0 ± 0.1 Vp-p. |
| 2 | Carrier Deviation | TP202 TP901 (Trigger: TP204) | VR204 VR210 VR205 | REC MH-2 | 1. Set the SELECT switch to the LINE position without anything connected to the VIDEO IN terminal. 2. Connect the frequency counter to TP202. 3. Adjust VR204 (CARRIER) so that the frequency is set to $3.85^{+0.05}_{-0.0}$ MHz. 4. Play back the color bar section of MH-2, and connect an oscilloscope to TP901. 5. Adjust VR210 so that the amplitude of the playback color bar signal is set to $1.0V \pm 0.05$ Vp-p. 6. Input the color bar signal to the VIDEO IN terminal and record it. Then play this signal back. Connect an oscilloscope to TP901 to measure the amplitude of the playback color bar signal. a) When the measured value is within 1.0 ± 0.1 Vp-p, proceed to the following item. b) When the measured value is not in the 1.0 ± 0.1 Vp-p range, adjust according to procedure 7. 7. Set the unit into the STOP mode: a) When the measured value is less than 0.9 Vp-p, rotate VR205 (DEV) counterclockwise by approx. 10 degrees while observing the PC board from the component surface. (Note: When VR205 is rotated counterclockwise while observing the board from the component surface, the amplitude of the recording signal is increased. When it is rotated clockwise, the amplitude of the recording signal is decreased.) Then record the color bar signal and play it back to confirm that the amplitude is within 1.0 ± 0.1 Vp-p. If the amplitude does not satisfy this range, repeat this procedure as required. If the amplitude is too large, rotate VR205 clockwise and confirm through recording and playback. b) When the measured value exceeds 1.1 Vp-p, rotate VR205 (DEV) clockwise by approx. 10 degrees while observing the board from the component surface. Then record the color bar signal and play it back to confirm that the amplitude is within 1.0 ± 0.1 Vp-p. If the amplitude is too small, adjust VR205 in the same manner as noted in Item a). If the amplitude is too large, repeat this procedure as required. |

| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Description and Waveform |
|-----|------------------------------------|--|--|-------------------|--|
| 3 | White Clip Dark Clip | TP203 (Trigger: TP204) | VR202 (White Clip), VR203 (Dark Clip) | Color Bar, REC | <ol style="list-style-type: none"> 1. Input the color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP203 of the S/S/V board, and adjust the amplitude CAL knob of the oscilloscope so that the distance between sync tip and white peak of the waveform reads 5 scales. 3. Adjust VR202 (WHITE) and VR203 (DARK) so that the waveform overshoot and under-shoot satisfy the ratio shown below.  <p style="text-align: center;">$A : B : C = 4.5 : 5 : 2$</p> |
| 4 | REC Color Level Ad- justment | TP501 (Trigger: TP204) of AMP board | VR401 | Color Bar REC | <ol style="list-style-type: none"> 1. Input the color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP501. 3. Rotate VR201 to minimize the FM signal. 4. Adjust VR401 so that the amplitude of color bar signal RED section is set to 35 ± 5 mV. <p>Note: Be sure to make the adjustment noted in Item 6 after this adjustment.</p>  |

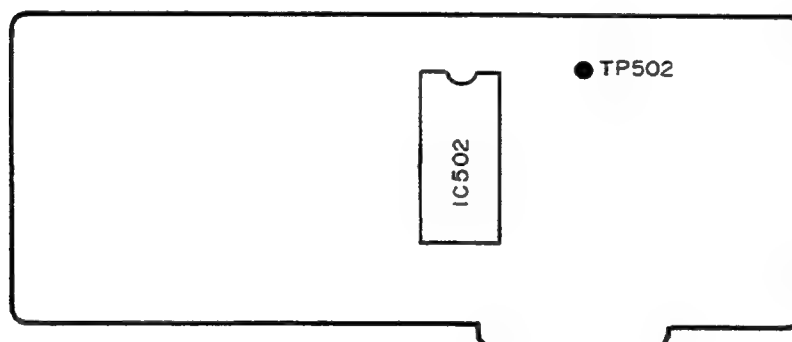
| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Description and Waveform |
|-----|-------------------------------|--|----------------------|----------------|--|
| 5 | REC Y FM Level Adjustment | TP501 (Trigger: TP204) (PRE AMP board) | VR201 | Color Bar, REC | <p>1. After making the adjustment in Item 5, adjust VR201 so that the amplitude of white peak section is set to 140 ± 5 mV.</p>  |
| 6 | Noise Cancel Level Adjustment | TP207 (Trigger TP204) of S/S/V board | VR213 of S/S/V board | PB | <p>Play back the tape prerecorded and adjust VR213 so that TP207 waveforms of the S/S/V board are flat. At this time, waveform difference should be less than 20 mVpp.</p>  |

| No. | Item | Check-point | Adjustment Parts | Signal & Mode | Adjustment & Confirmation |
|-----|---|-------------|------------------|---|--|
| 7 | SECAM DET. sync amplifier oscillating level | TP401 | VR402 T401 | Input: SECAM color bar signal REC | <p>1. Input a SECAM color bar signal to VIDEO IN. 2. Connect an oscilloscope (10:1) to TP401. 3. Adjust VR402 until the waveform at TP401 appears as shown below in MESECAM mode. (If the waveform appears otherwise, adjust T401.)</p>  <p>Waveform: T401</p> <p>NG OK NG</p> <p>fh/2 adjustment</p> |
| 8 | | TP401 | | MESECAM self recording playback | <p>1. Record SECAM color bar signals in SECAM mode and play back. 2. Connect an oscilloscope (10:1) to TP401. Check that the waveform has an amplitude (A) of 4.0 ± 0.2 Vp-p.</p> |



VIDEO

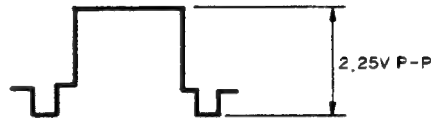

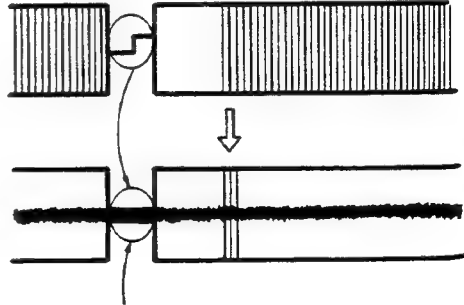
* This circuit board is viewed from component side.

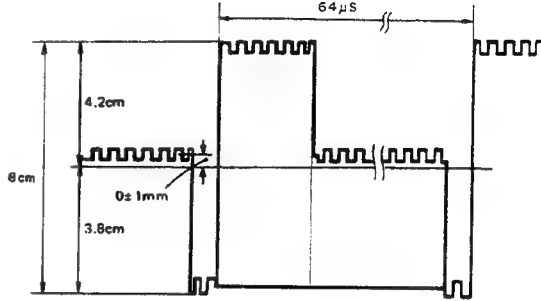


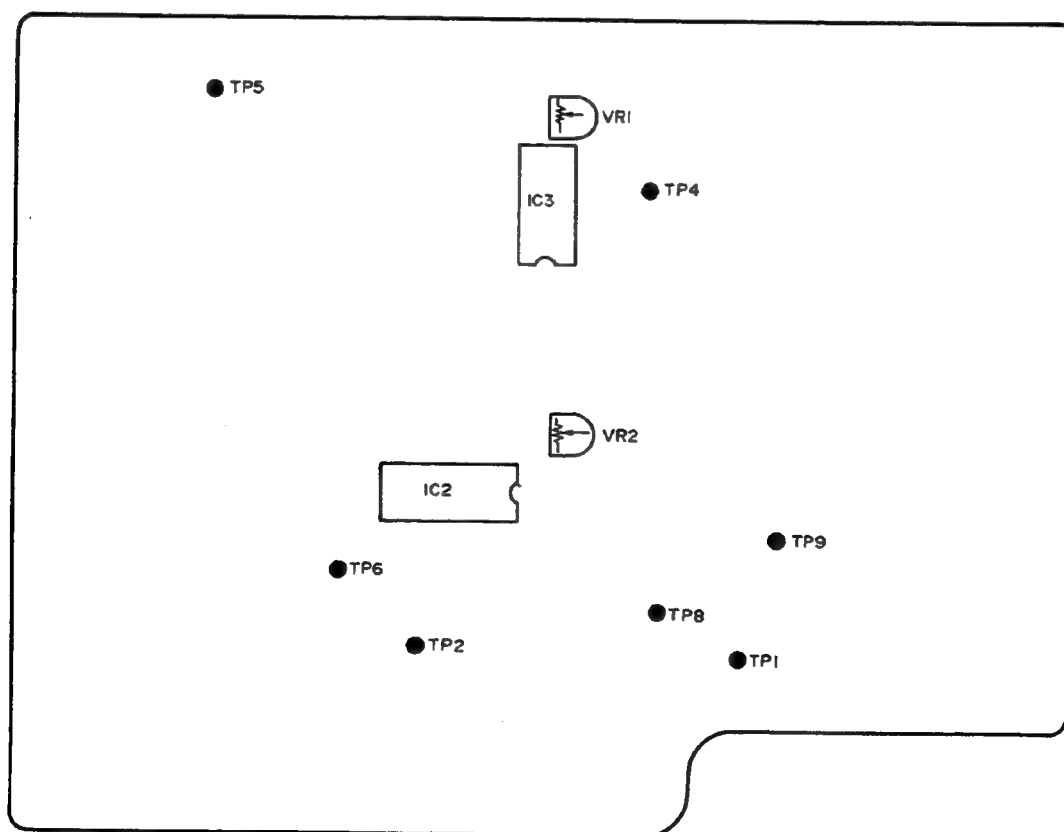
PREAMP

* This circuit board is viewed from component side.

4-6. DIGITAL

| No. | Item | Check-point | Adjusting Parts | Mode/Condition | Adjustment and Confirmation |
|-----|-----------|-------------|-----------------|---------------------------------|--|
| 1 | D/A LEVEL | TP8 | VR1 (D/A LEVEL) | SLOW mode | <ol style="list-style-type: none"> 1. Play back a tape on which color bar signals are recorded. 2. Check that the output at TP201 on the S/S/V board is 2 Vp-p, select the SLOW mode, and turn VR3 until the white peak of the waveform at TP8 begins to be clipped. 3. Turn VR1 (D/A LEVEL) until the peak-to-peak value of the clipped waveform at TP8 is 2.25 Vp-p.  |
| 2 | A/D LEVEL | TP8 | VR3 (A/D LEVEL) | SLOW mode | <p>Play back the tape in the SLOW mode, and adjust VR3 (A/D LEVEL) so that the color bar signal at TP8 is 2 Vp-p.</p>  |
| 3 | DA LEVEL | TP2 | VR1 (D/A LEVEL) | PB DNR ON (Use color bar tape.) | <p>Play back the tape in the normal mode (with the NR switch ON DNR II mode), and adjust VR1 (D/A LEVEL until the video signals at TP2 are at the minimum level. (V rate)</p>  <p>Adjust V sync signal to be at the same level I.</p> |

| No. | Item | Check-point | Adjusting Parts | Mode/Condition | Adjustment and Confirmation |
|-----|------|--------------|-----------------|----------------|---|
| 4 | VCO | TP6 (PLL) | VR2 (VCO) | SLOW mode | <p>1. Play back the tape in the SLOW mode, turn the VARIABLE knob on the oscilloscope until the peak of the waveform at TP6 is at the 8th division of the oscilloscope scale.</p> <p>2. Turn VR2 (VCO) to adjust as shown below.</p>  |



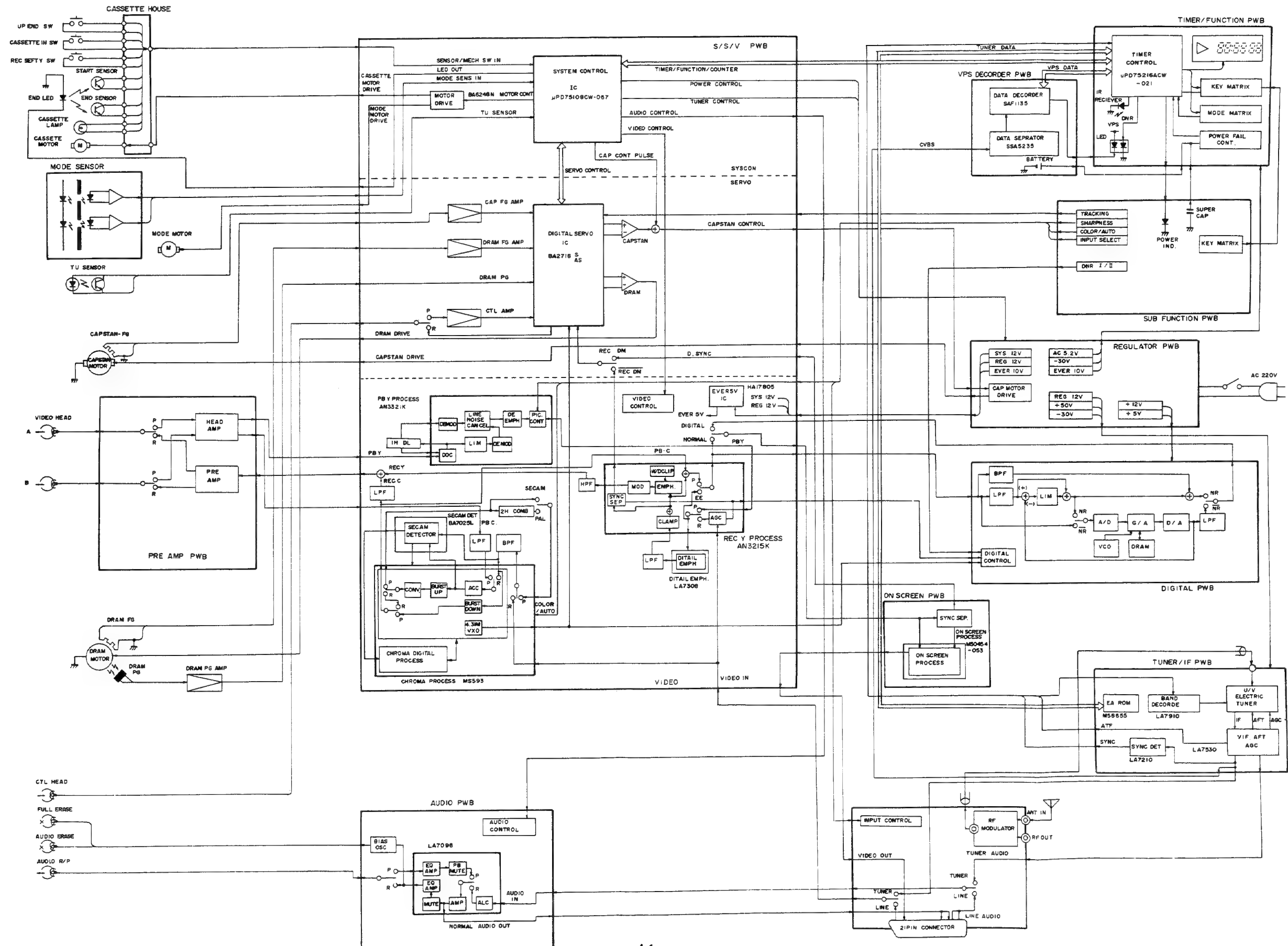
DIGITAL

* This circuit board is viewed from component side.

SECTION 4

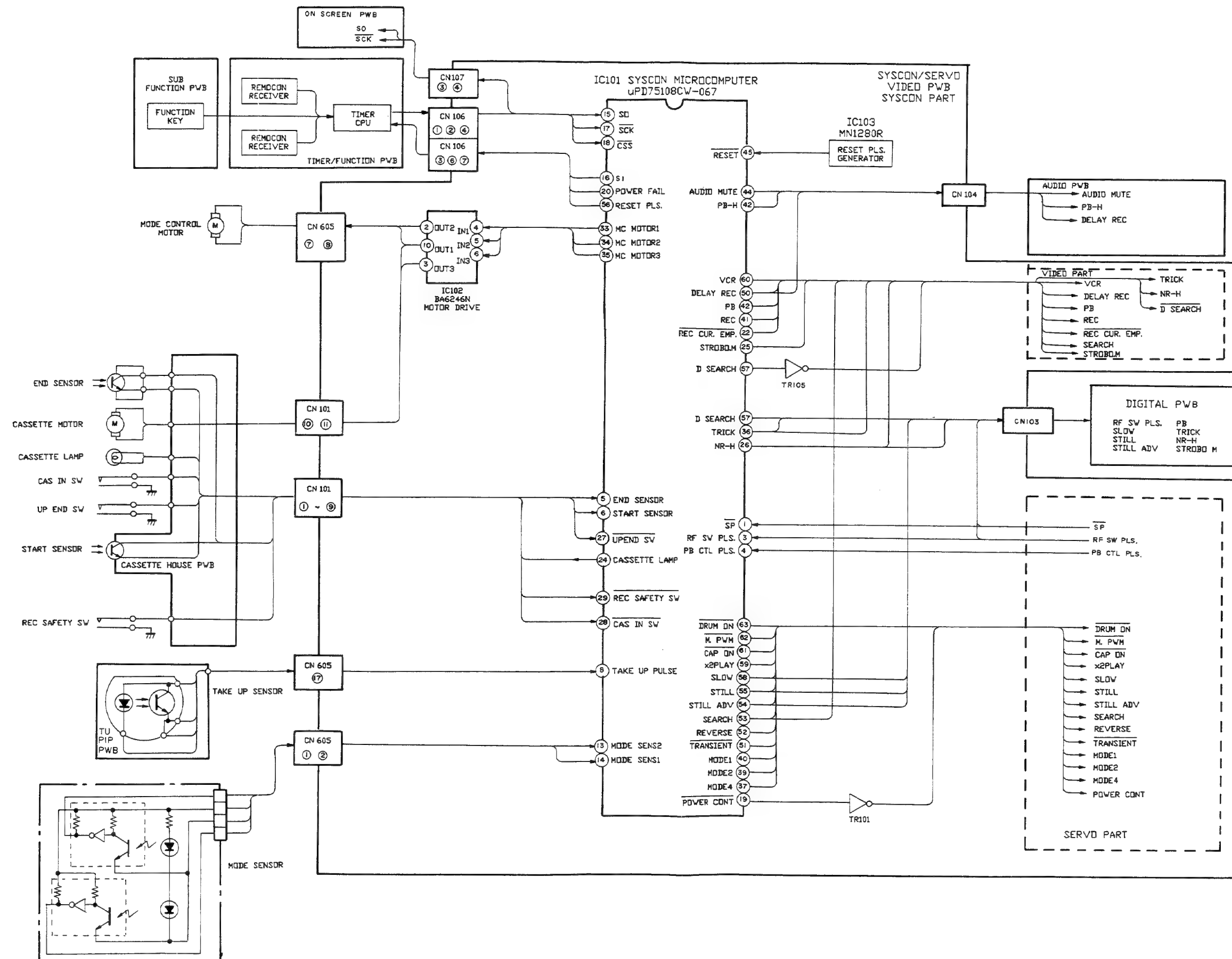
DIAGRAMS AND TIMING CHARTS

1. GENERAL BLOCK DIAGRAM

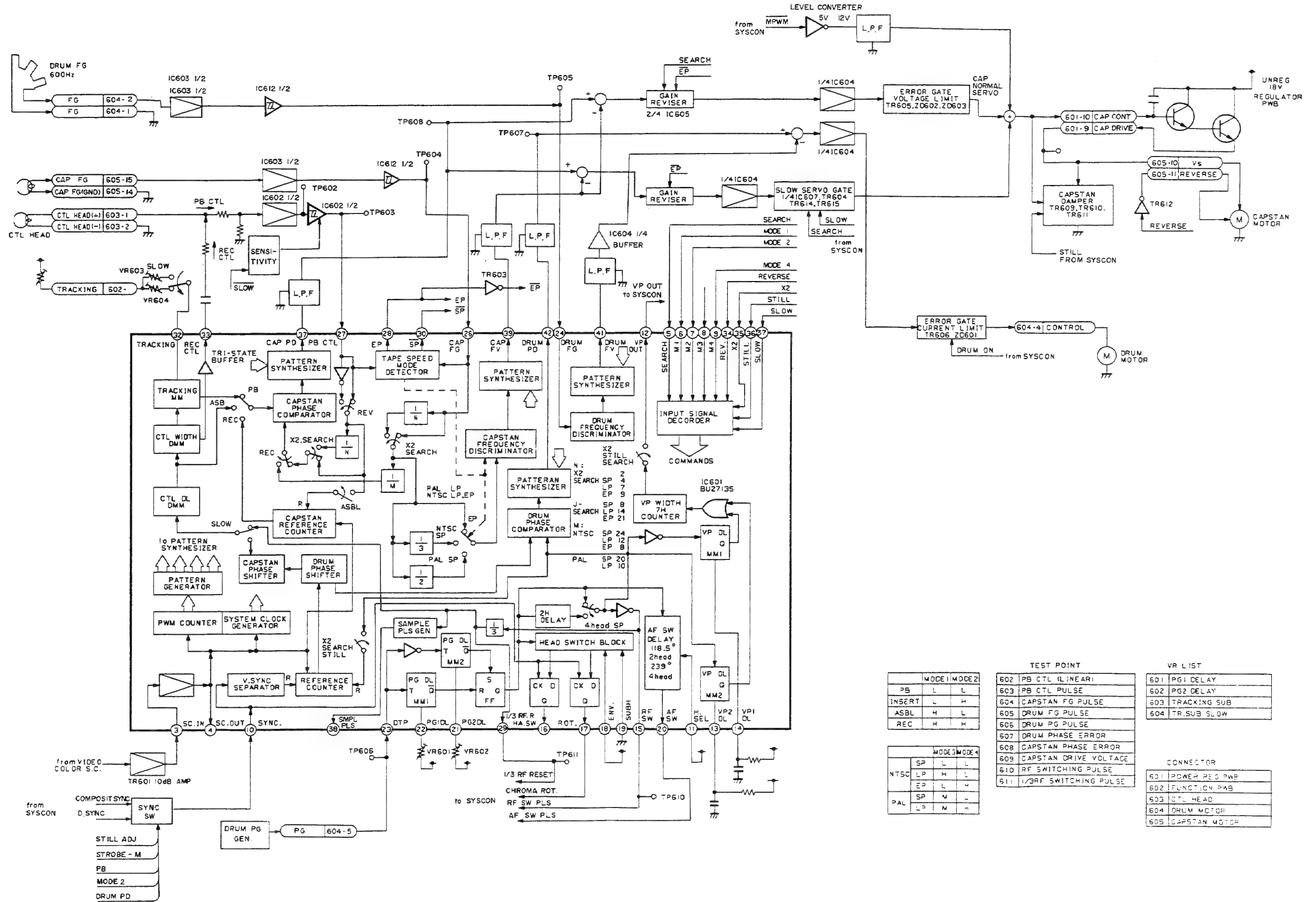


2. BLOCK DIAGRAM

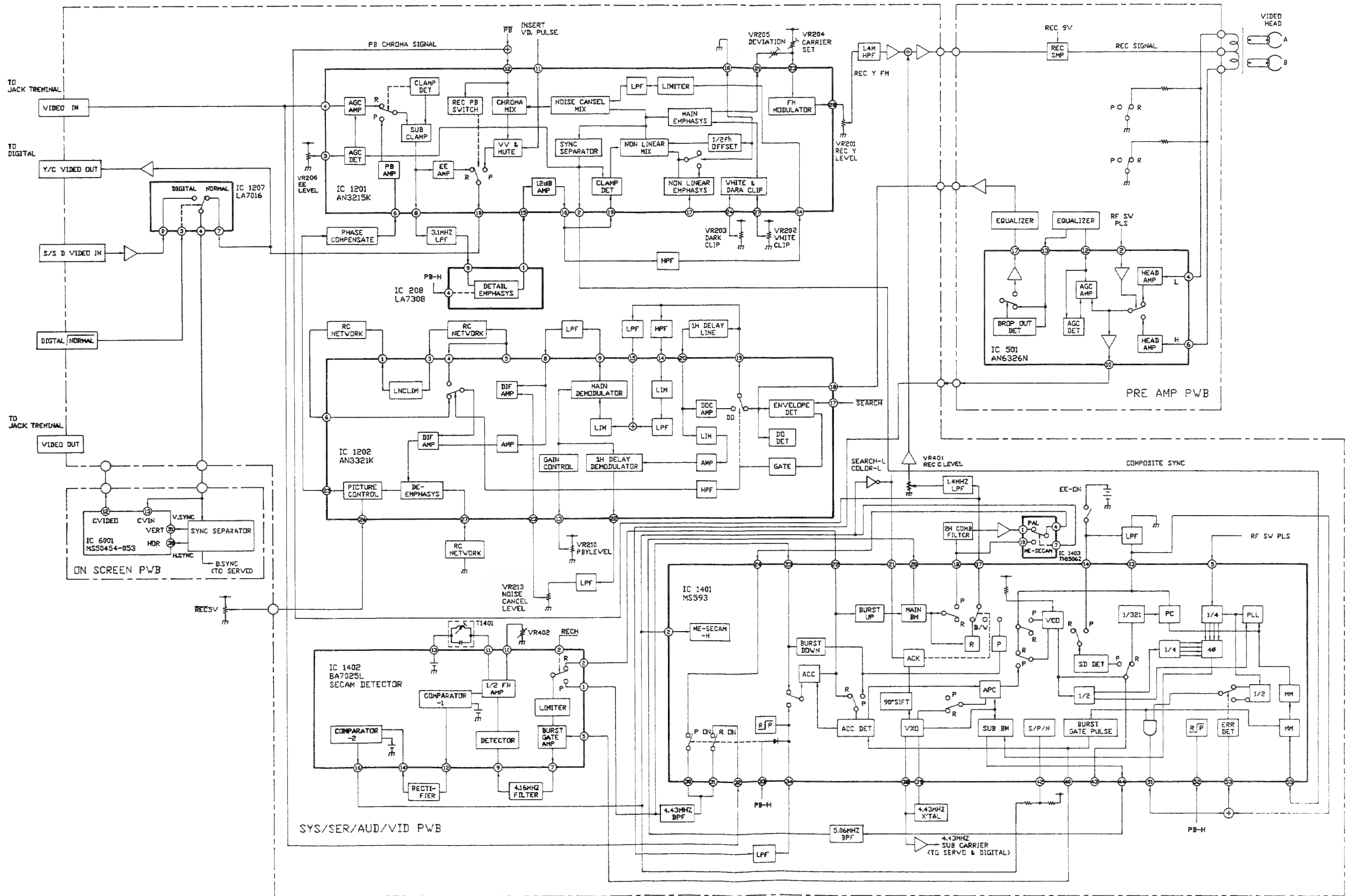
2-1. SYSTEM CONTROL BLOCK DIAGRAM



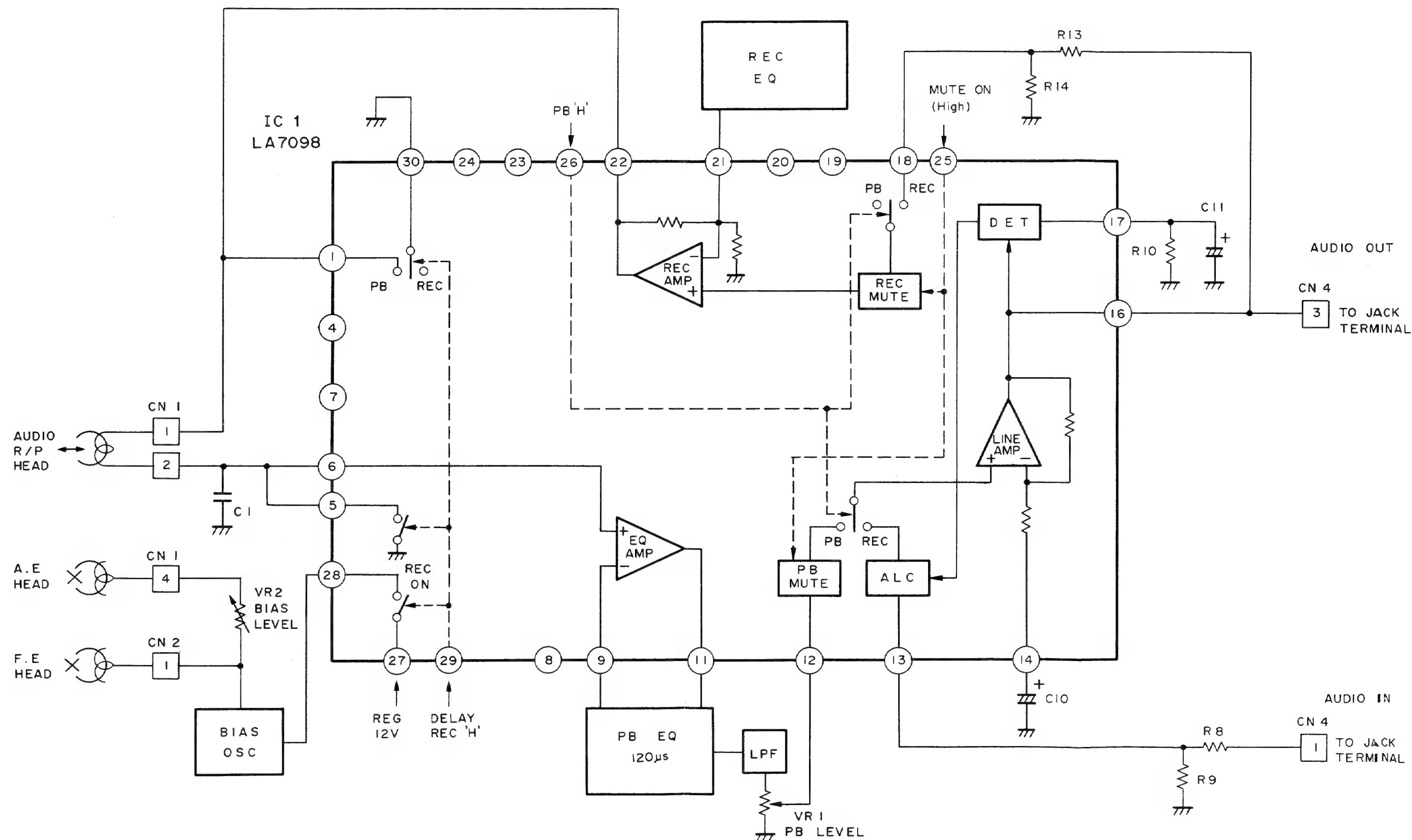
2-2. SERVO CONTROL BLOCK DIAGRAM



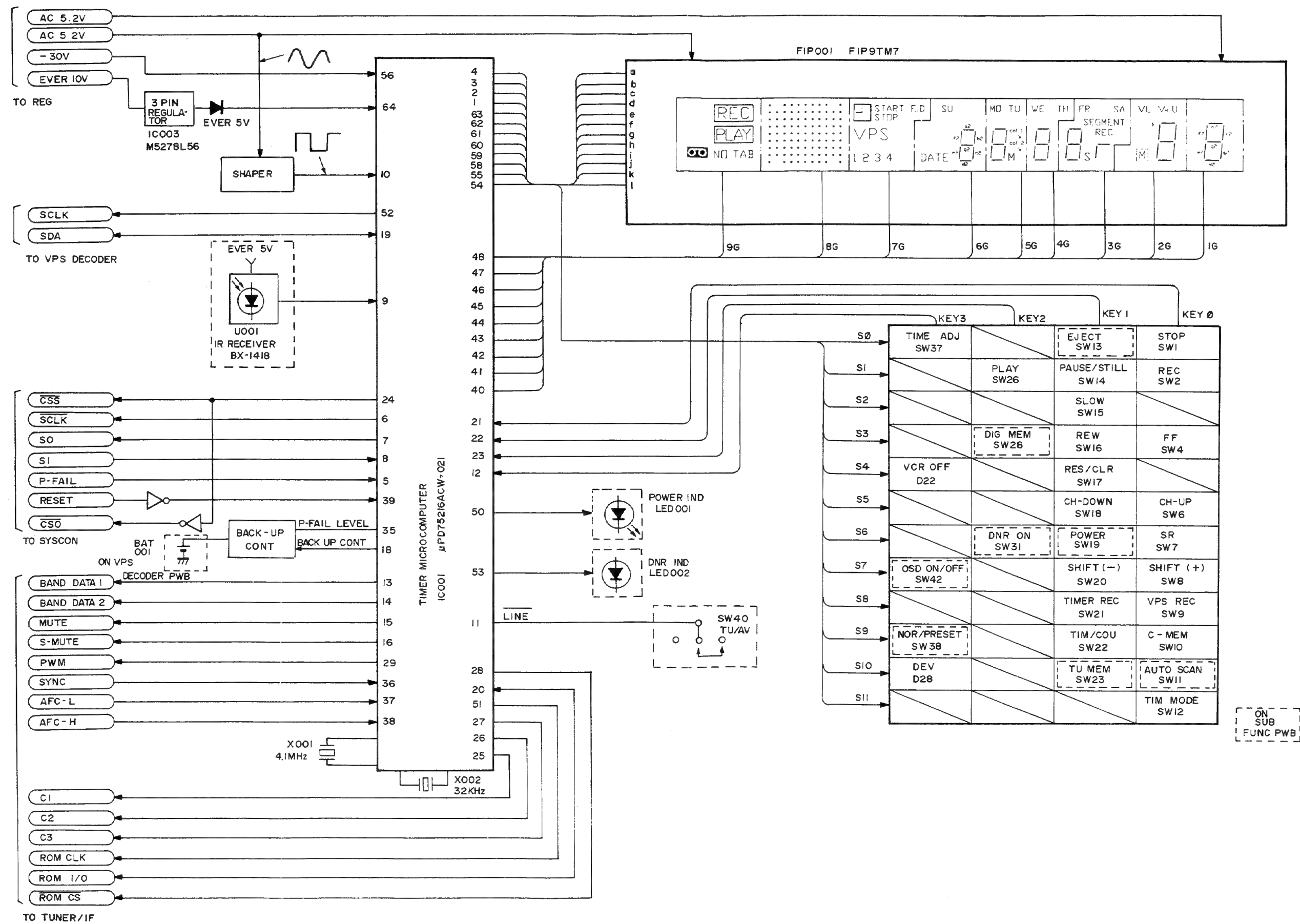
2-3. VIDEO/CHROMA BLOCK DIAGRAM



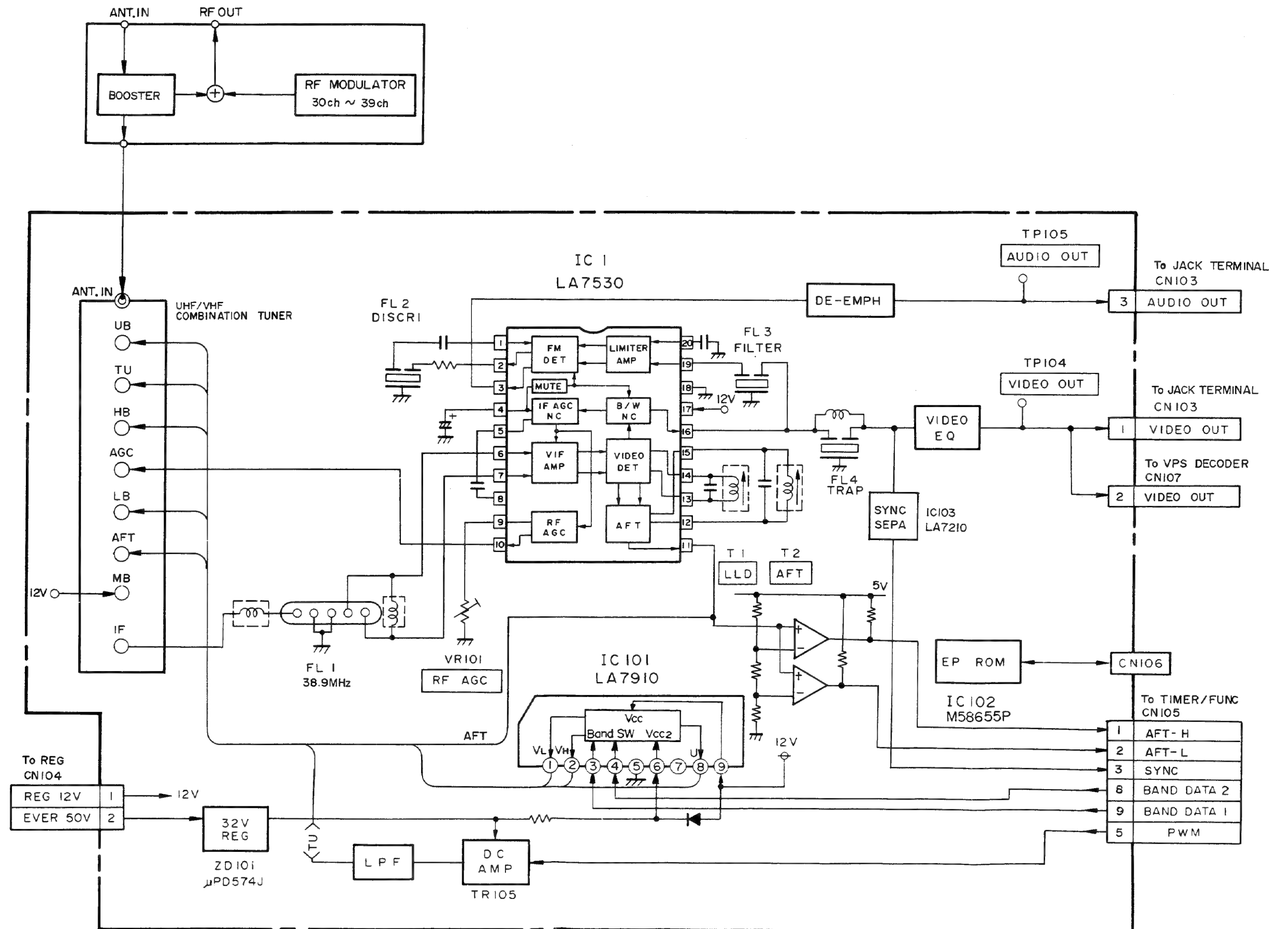
2-4. AUDIO BLOCK DIAGRAM



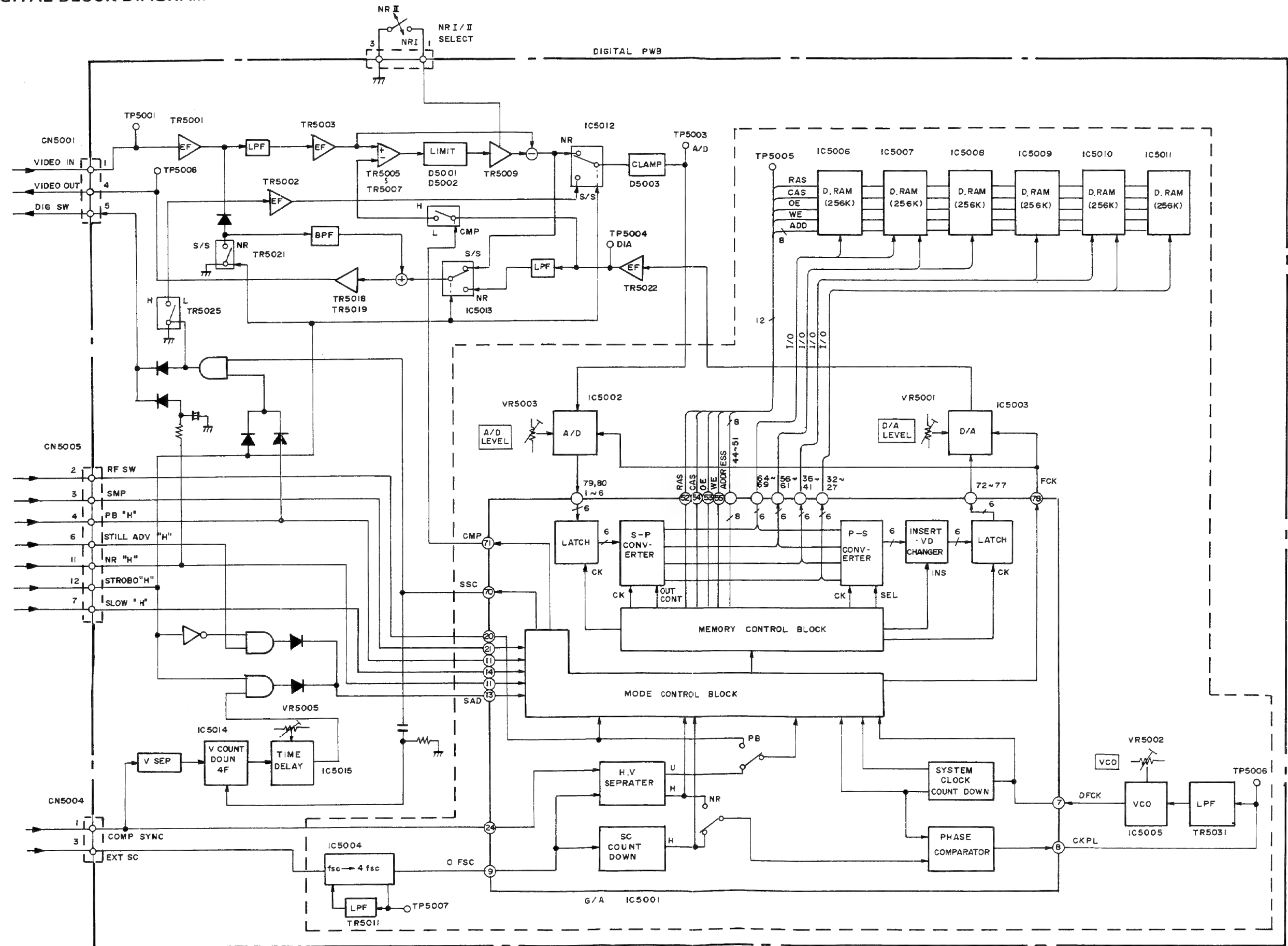
2-5. TIMER FUNCTION BLOCK DIAGRAM



2-6. TUNER/IF BLOCK DIAGRAM

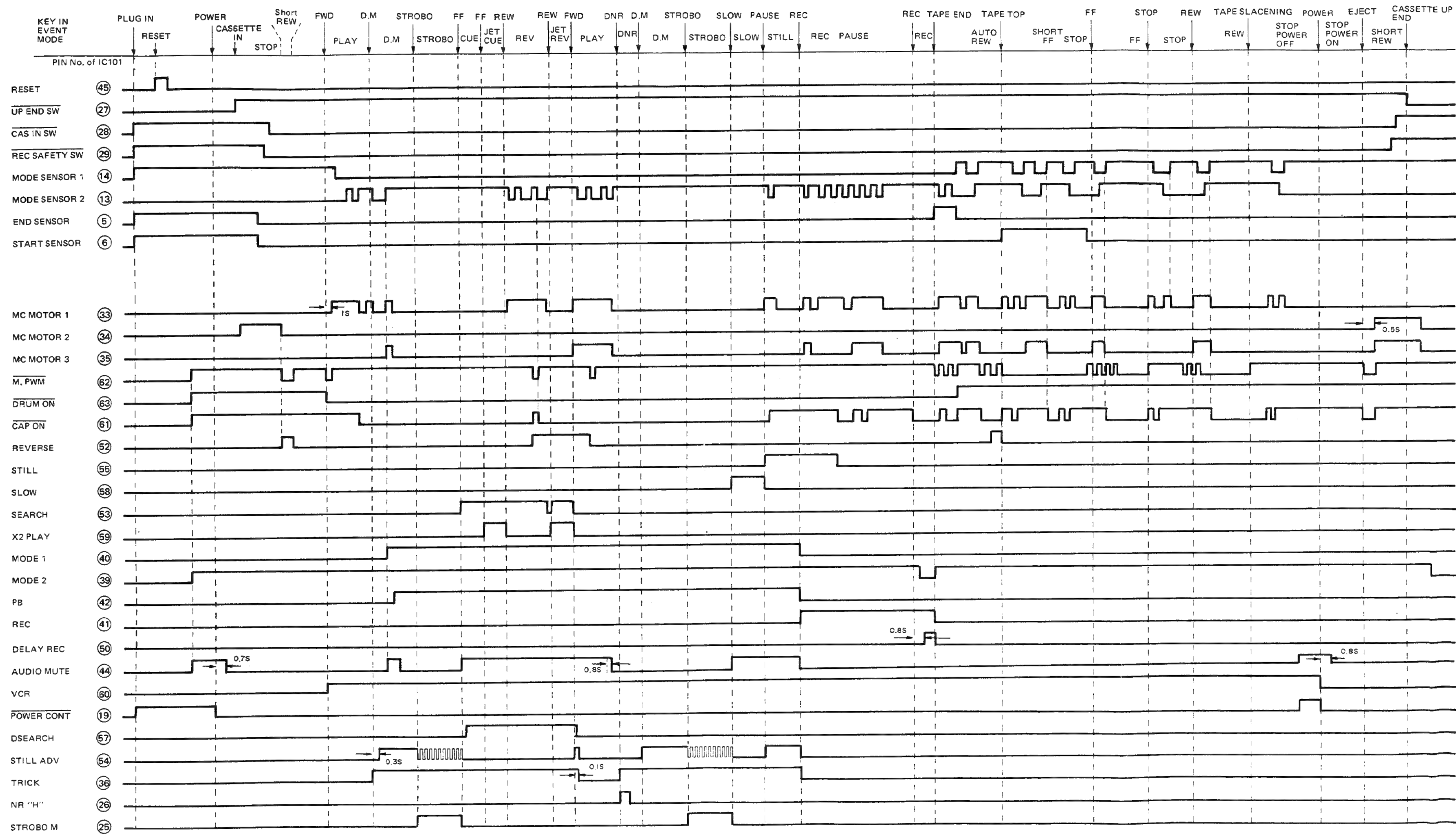


2-7. DIGITAL BLOCK DIAGRAM

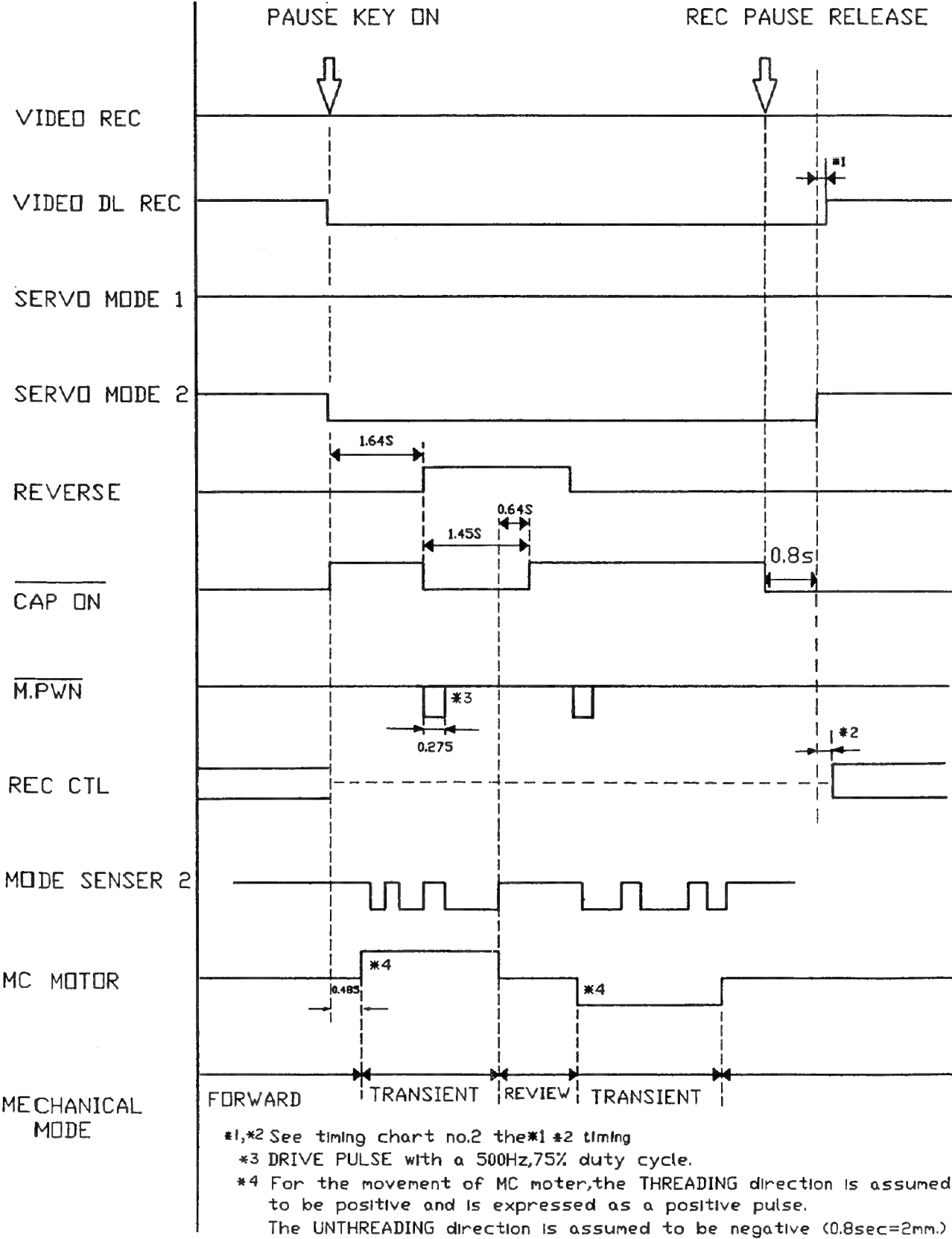


3. TIMING CHART

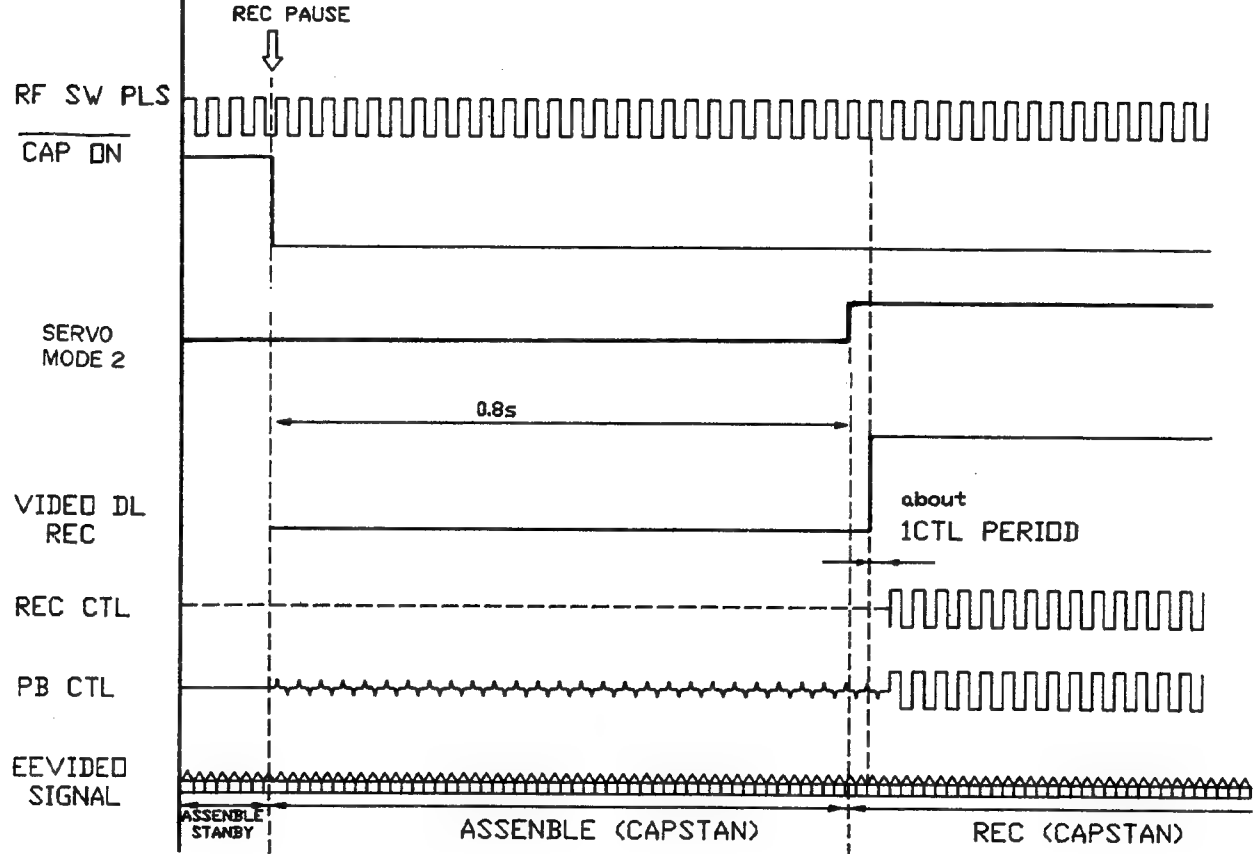
3-1. SYSTEM CONTROL TIMING CHART



3-2. ASSEMBLE RECORD TIMING CHART 1

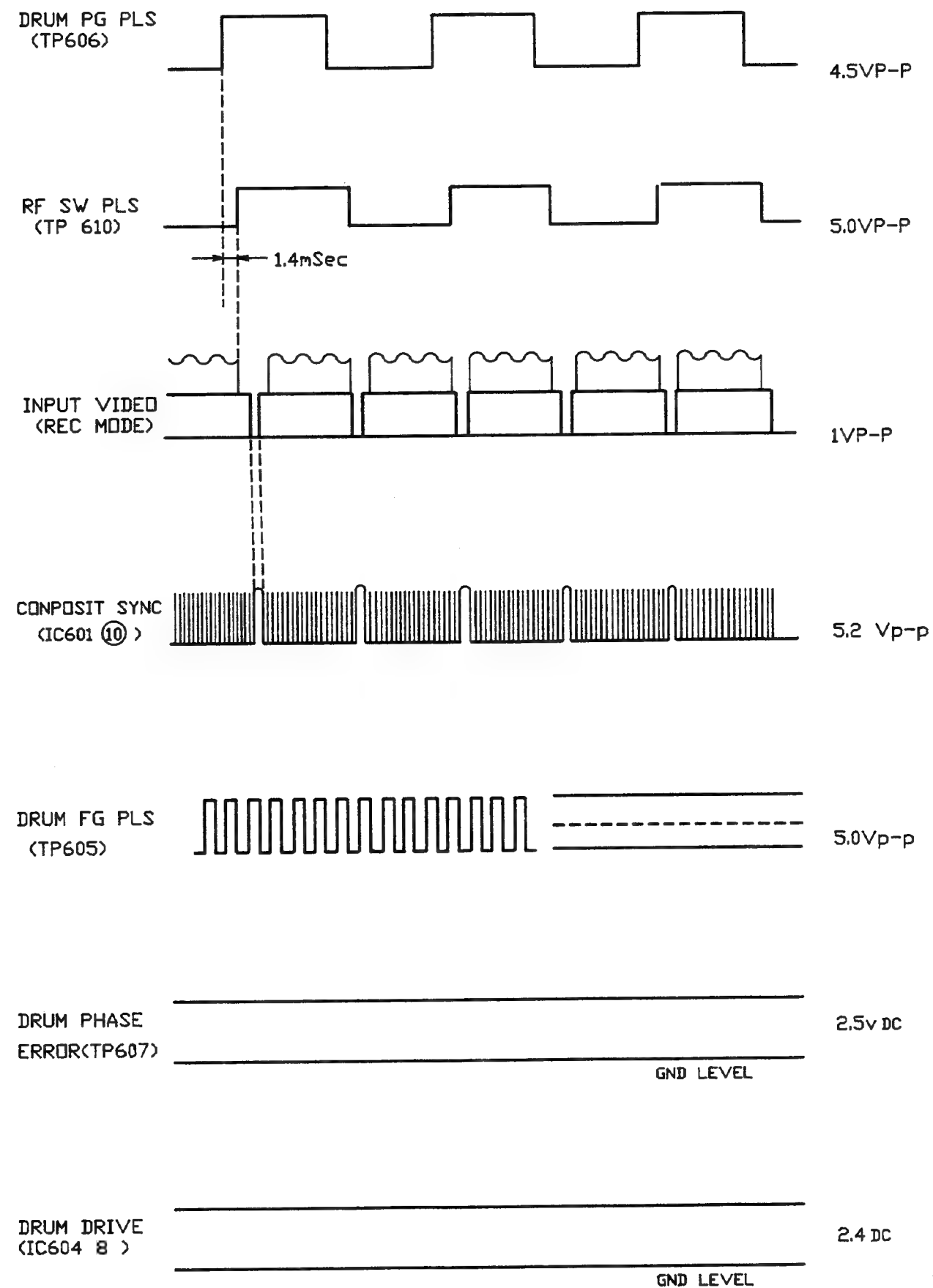


3-3. ASSEMBLE RECORD TIMING CHART 2

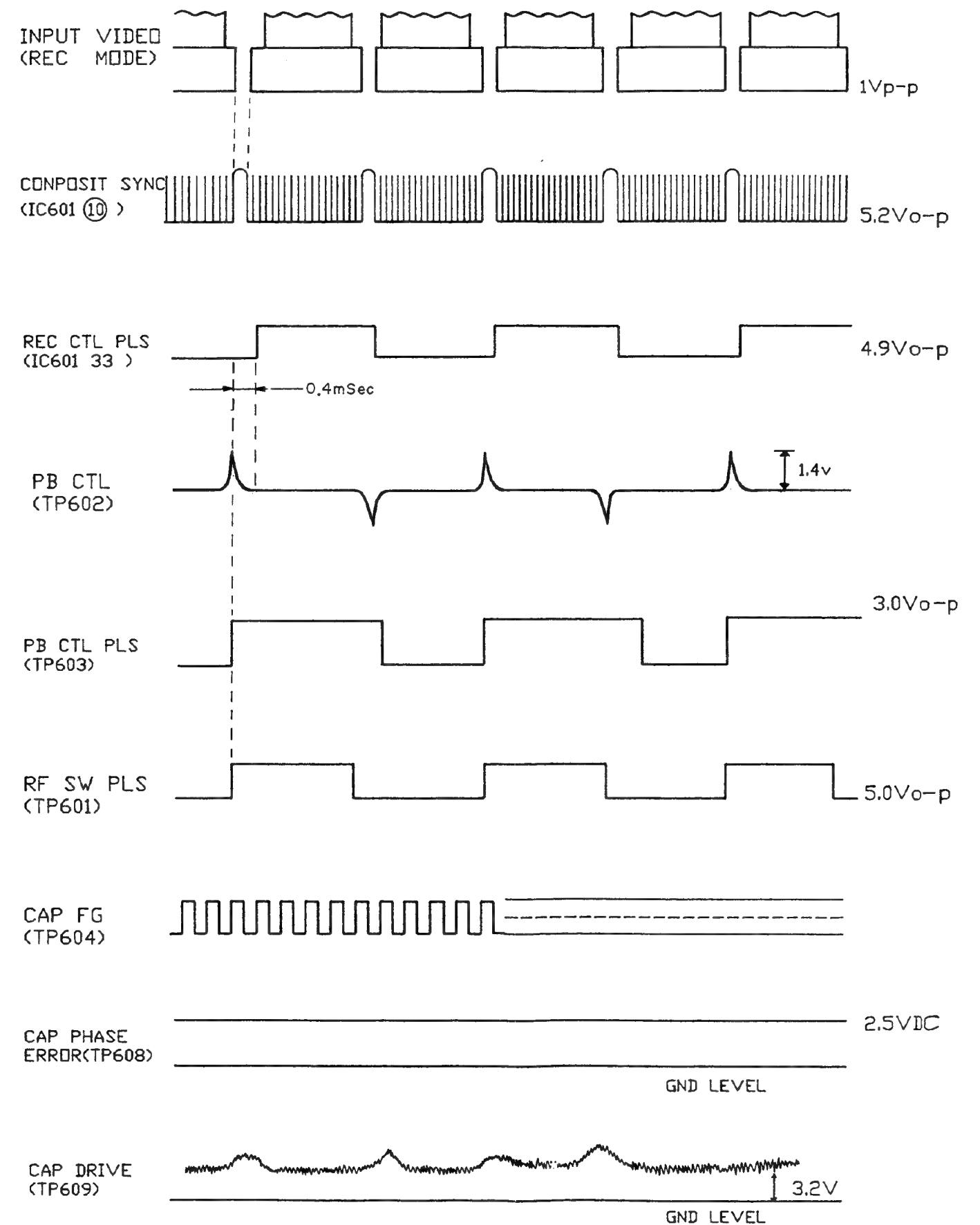


After the REC PAUSE is released, CAP ON is set low. Then, the CAPSTAN MOTOR starts rotating and the phase between REC CTL (VSYNC of the VIDEO SIGNAL) and PB CTL is matched. The connection operation is completed after about 0.8 second (about 24 frames) MODE 2 is set high and SERVO enters REC operation state. The first REC CTL pulse is not recorded, the pulse is recorded from the leading edge of the second CTL pulse. In addition, DL REC of the VIDEO is output synchronizing with the leading edge of RF SW PLS so that the joint part of VIDEO TRACK can be positioned within the vertical blanking. DL REC is a control signal for the REC AMP recording current.

3-4. DRUM SERVO TIMING CHART 1

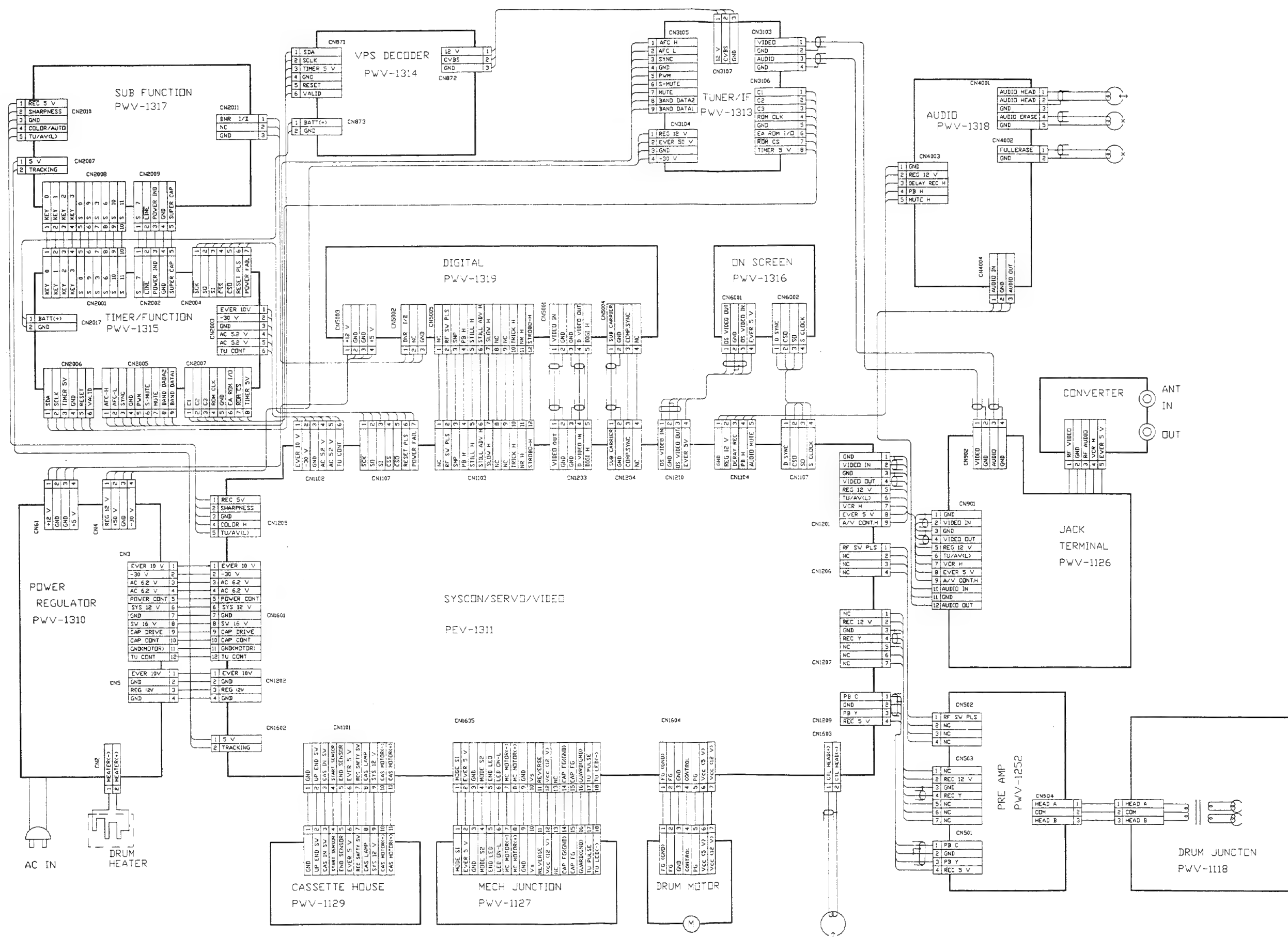


3-5. CAPSTAN SERVO TIMING CHART 2

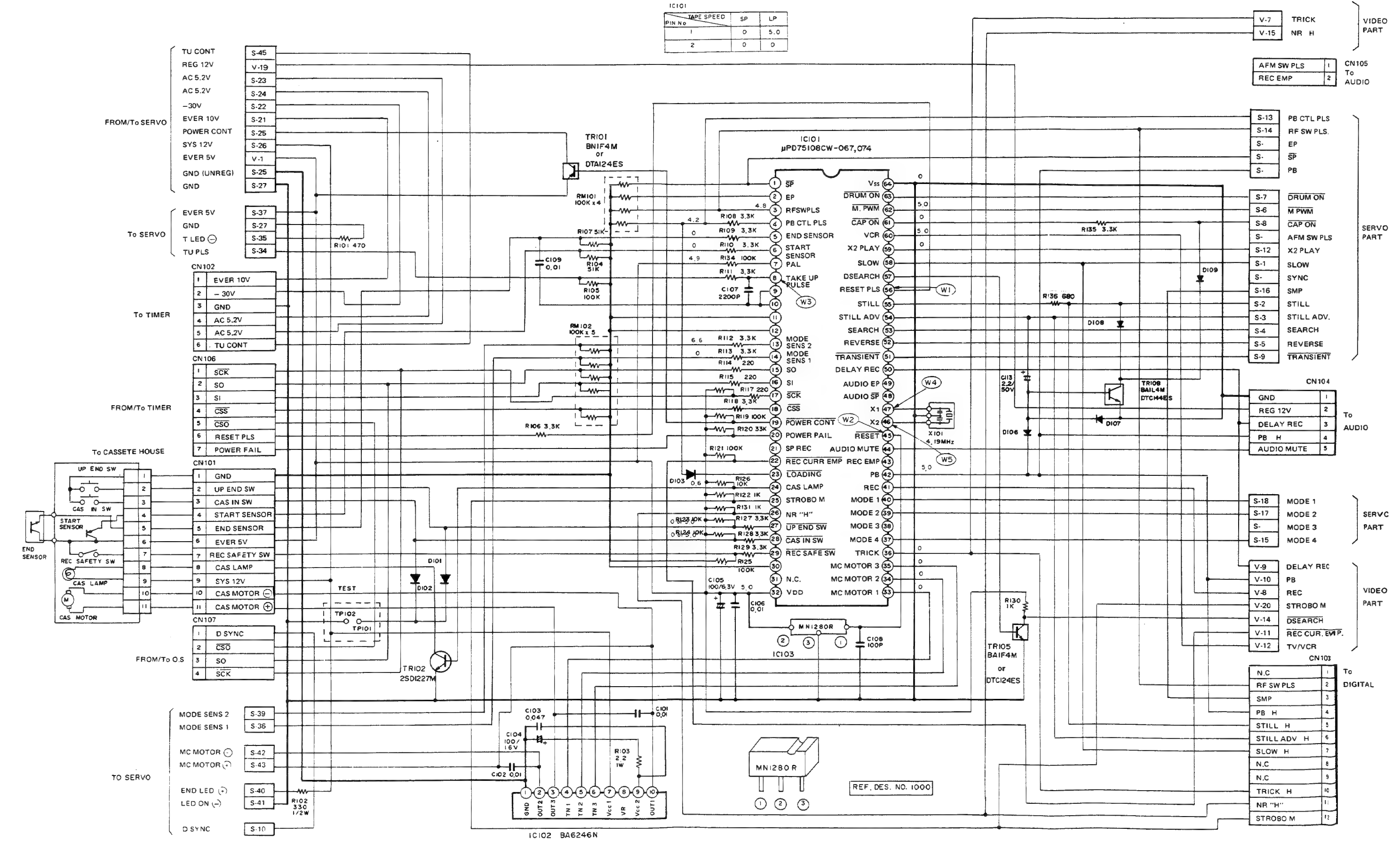


4. SCHEMATIC/CIRCUIT BOARD DIAGRAMS

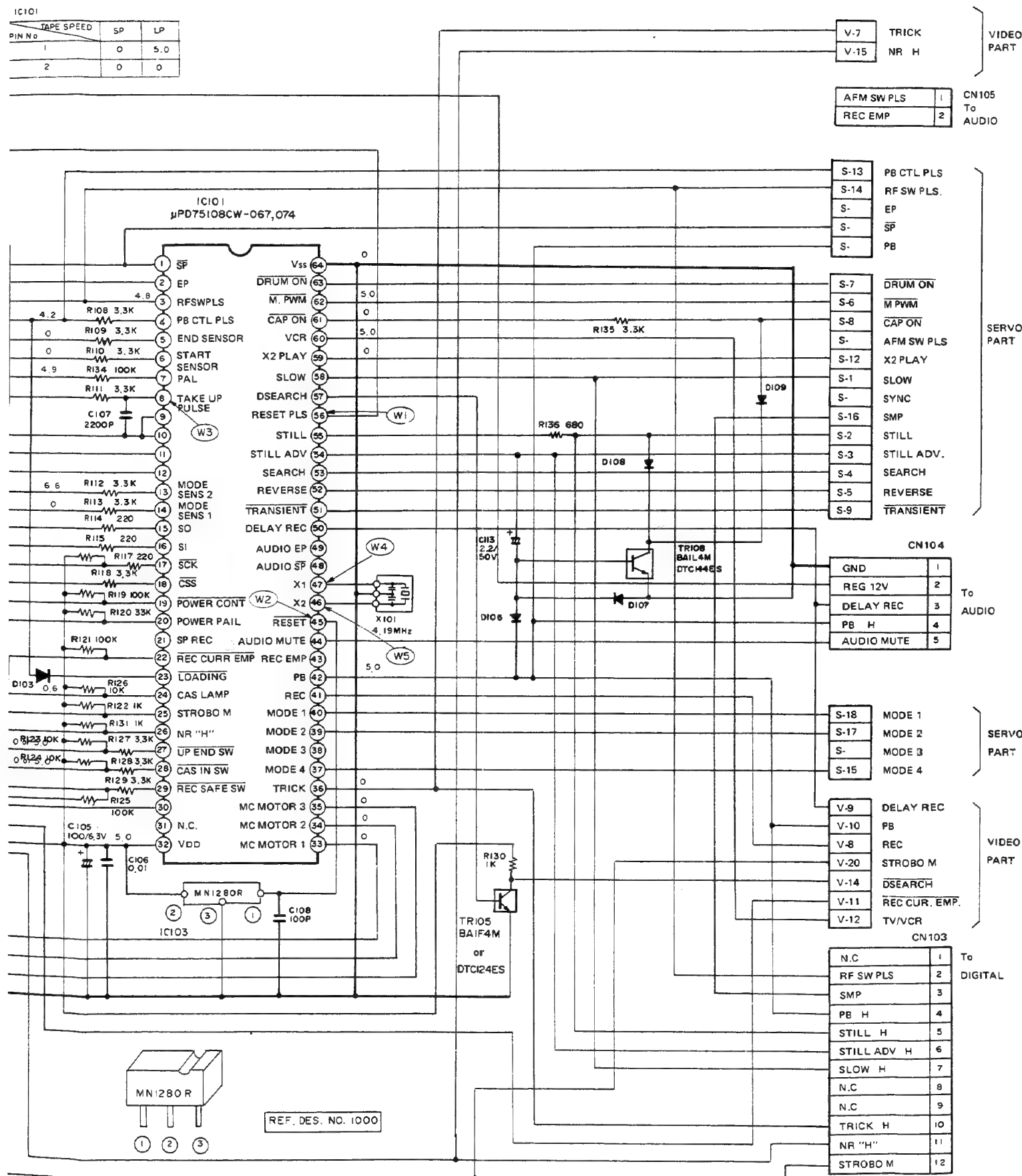
4-1. FRAME WIRING



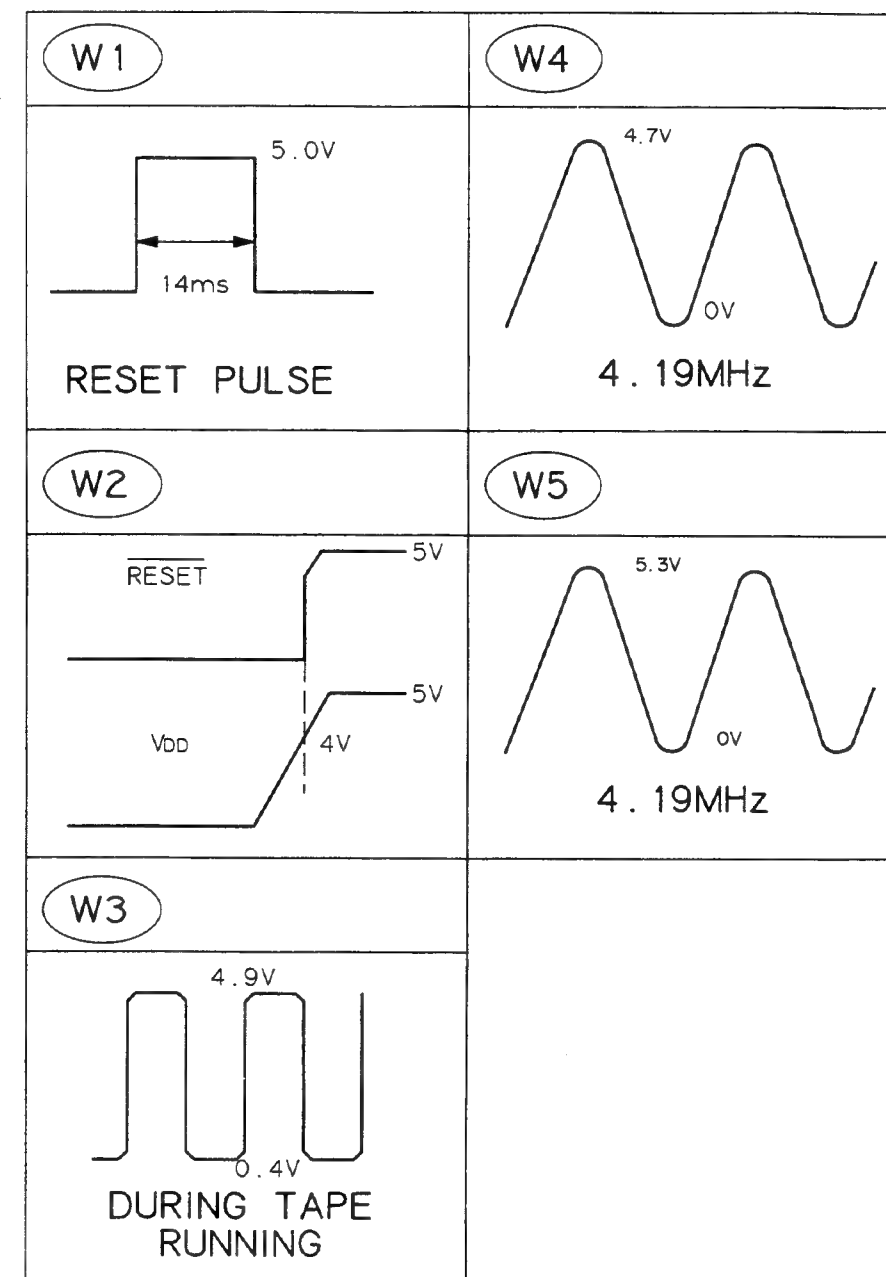
4-2. SYSCON SCHEMATIC DIAGRAM



| IC101 | TAPE SPEED | SP | LP |
|--------|------------|----|-----|
| PIN NO | | | |
| 1 | | 0 | 5.0 |
| 2 | | 0 | 0 |



SYSCON WAVEFORMS



| IC101 | PLAY | REC | REC PAUSE | STOP |
|--------|--------|-----|-----------|------|
| PIN NO | | | | |
| 60 | MODE 1 | 0 | 4.9V | 4.9V |
| 61 | MODE 2 | 0 | 4.9V | 0 |

| IC101 | REC SPEED SW | SP | LP | EP |
|-------|--------------|----|------|------|
| PIN | | | | |
| 62 | PB MODE SP | 0 | 4.8V | 4.8V |
| 63 | PB MODE EP | 0 | 0 | 4.8V |
| 64 | MODE 3 | 0 | 4.9V | 0 |
| 65 | MODE 4 | 0 | 0 | 4.9V |

| MOTOR1,2,3 OUT MODE | MODE/CAS | MODE/CAS | MODE/CAS | CASSETTE | MODE |
|---------------------|----------|----------|----------|----------|-------|
| MOTOR1 | MOTOR2 | MOTOR3 | MOTOR | MOTOR | MOTOR |
| 0 | 0 | 0 | STOP | STOP | |
| 4.8V | 0 | 0 | STOP | FORWARD | |
| 4.8V | 0 | 4.8V | STOP | REVERSE | |
| 0 | 4.8V | 0 | CAS.DOWN | STOP | |
| 0 | 4.8V | 4.8V | CAS.UP | STOP | |

(NOTE)

- IC101 μPD75108CW-067 is used in MP0001 up to 9500.
- IC101 μPD75108CW-074 is used in MP9501 and up. In the same way as the change was made to IC101 CW-074, the following parts are deleted.

- Transistor TR108 BA1L4M or DTC144ES
- Diodes D106, D107, D108, D109
- Capacitor C113 2.2u, 50V
- Resistors R135, R136 (Red shaded parts)

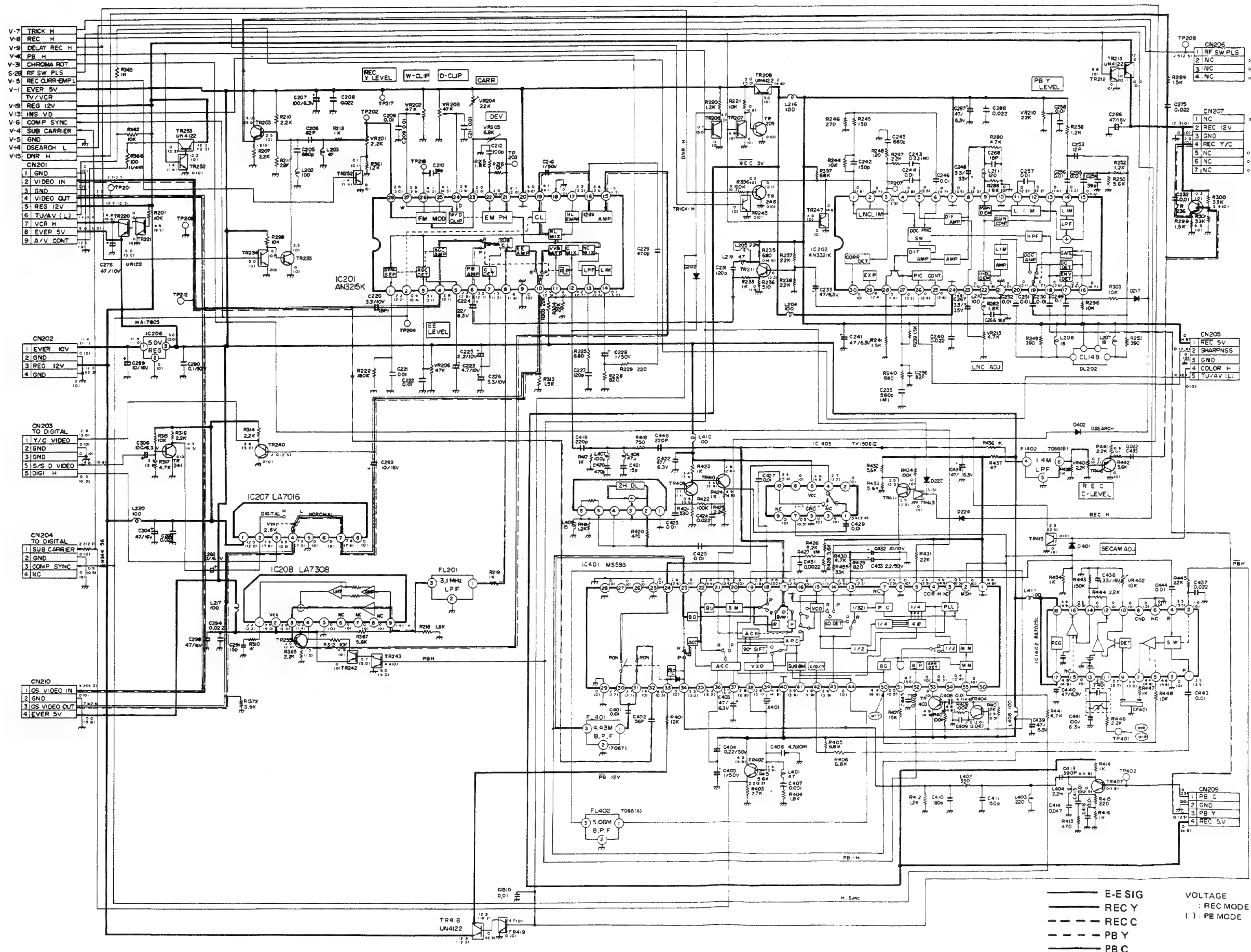
SE



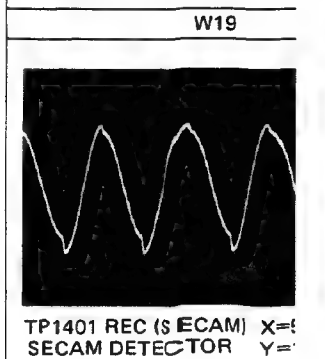
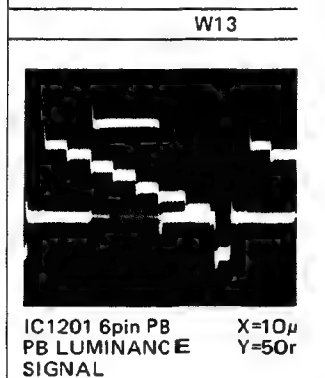
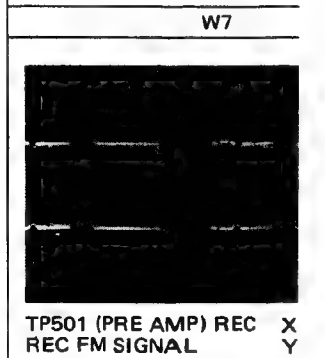
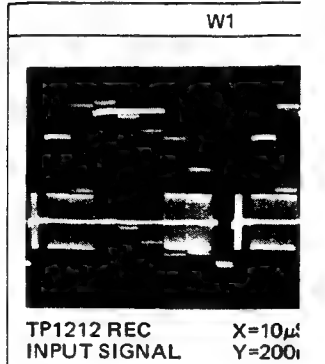


| | | |
|--|---|--|
| <p>(W1)</p> <p>25 Hz</p> <p>1.4V</p> <p>TP602 SP PB</p> | <p>(W5)</p> <p>4.7V</p> <p>25Hz</p> <p>TP606 REC/PB</p> | <p>(W9)</p> <p>5.0V</p> <p>25Hz</p> <p>TP610 REC/PB</p> |
| <p>(W2)</p> <p>4.2V</p> <p>120ns</p> <p>TP603 SP PB</p> | <p>(W6)</p> <p>2.5V</p> <p>TP607 REC/PB</p> | <p>(W10)</p> <p>120ns</p> <p>TP611 REC/PB</p> |
| <p>(W3)</p> <p>1.8V</p> <p>TP604 SP REC/PB</p> | <p>(W7)</p> <p>2.5V</p> <p>TP608 REC/PB</p> | <p>(W11)</p> <p>1.4 V_{PP}</p> <p>4.43 MHz</p> <p>IC601 ③ REC/PB</p> |
| <p>(W4)</p> <p>4.7V</p> <p>500Hz</p> <p>TP605 REC/PB</p> | <p>(W8)</p> <p>3.2V</p> <p>TP609 SP REC/PB</p> | <p>(W12)</p> <p>5.2V</p> <p>50Hz</p> <p>IC 601 ⑩ REC/PB</p> |

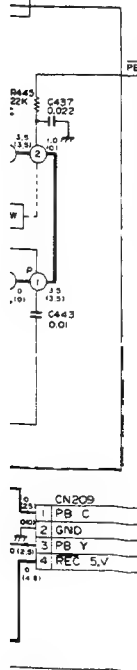
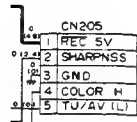
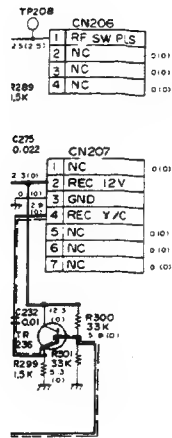
4-4. VIDEO/CHROMA SCHEMATIC DIAGRAM



VIDEO WAVEFORMS



VIDEO WAVEFORMS

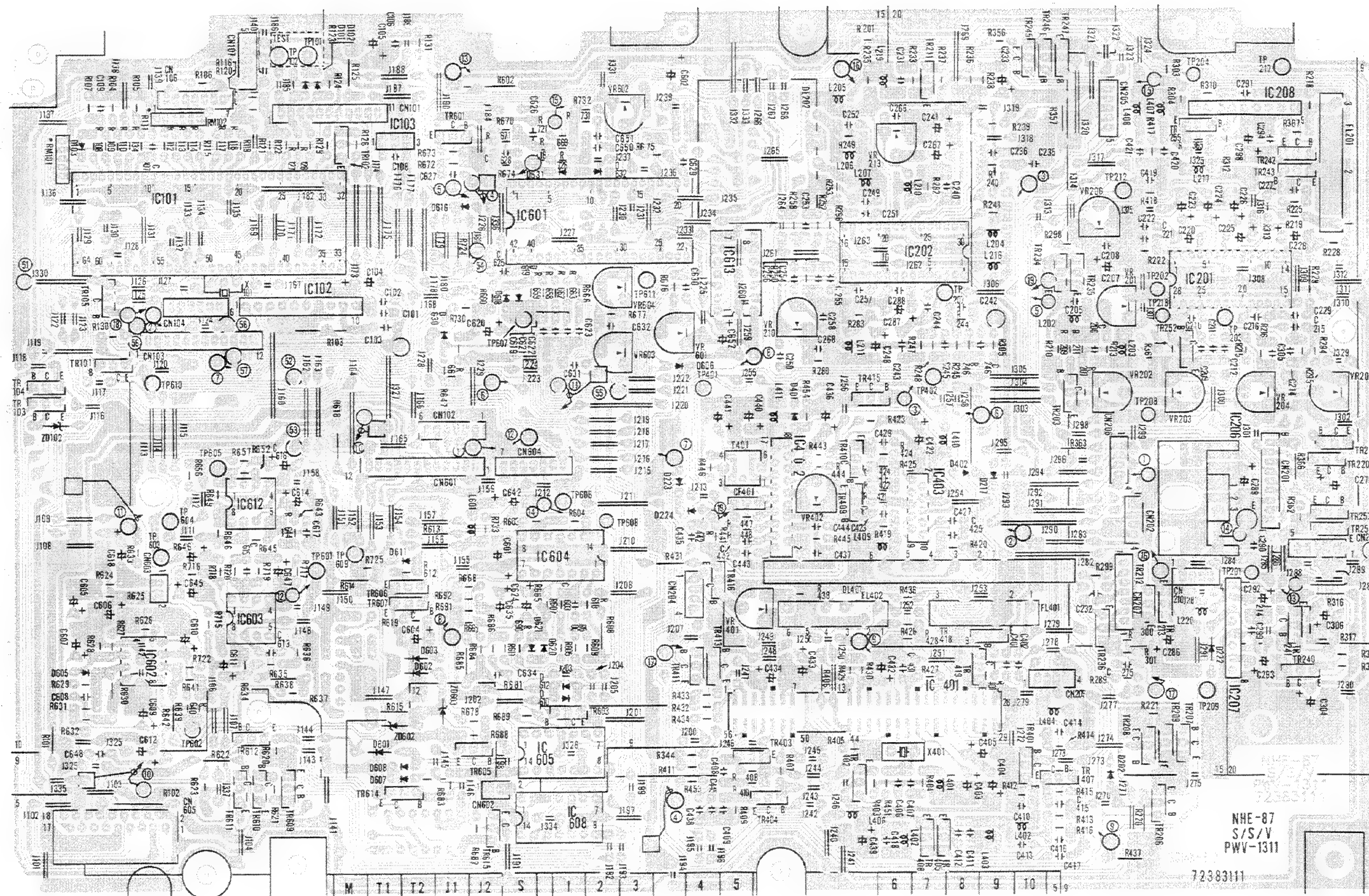


| PIN | DIAGN | DIAGN |
|-----|------------|-------|
| 1 | REC | 25 |
| 2 | SHARPNESS | 25 |
| 3 | GND | 25 |
| 4 | COLOR | 25 |
| 5 | TO/AV (LT) | 25 |

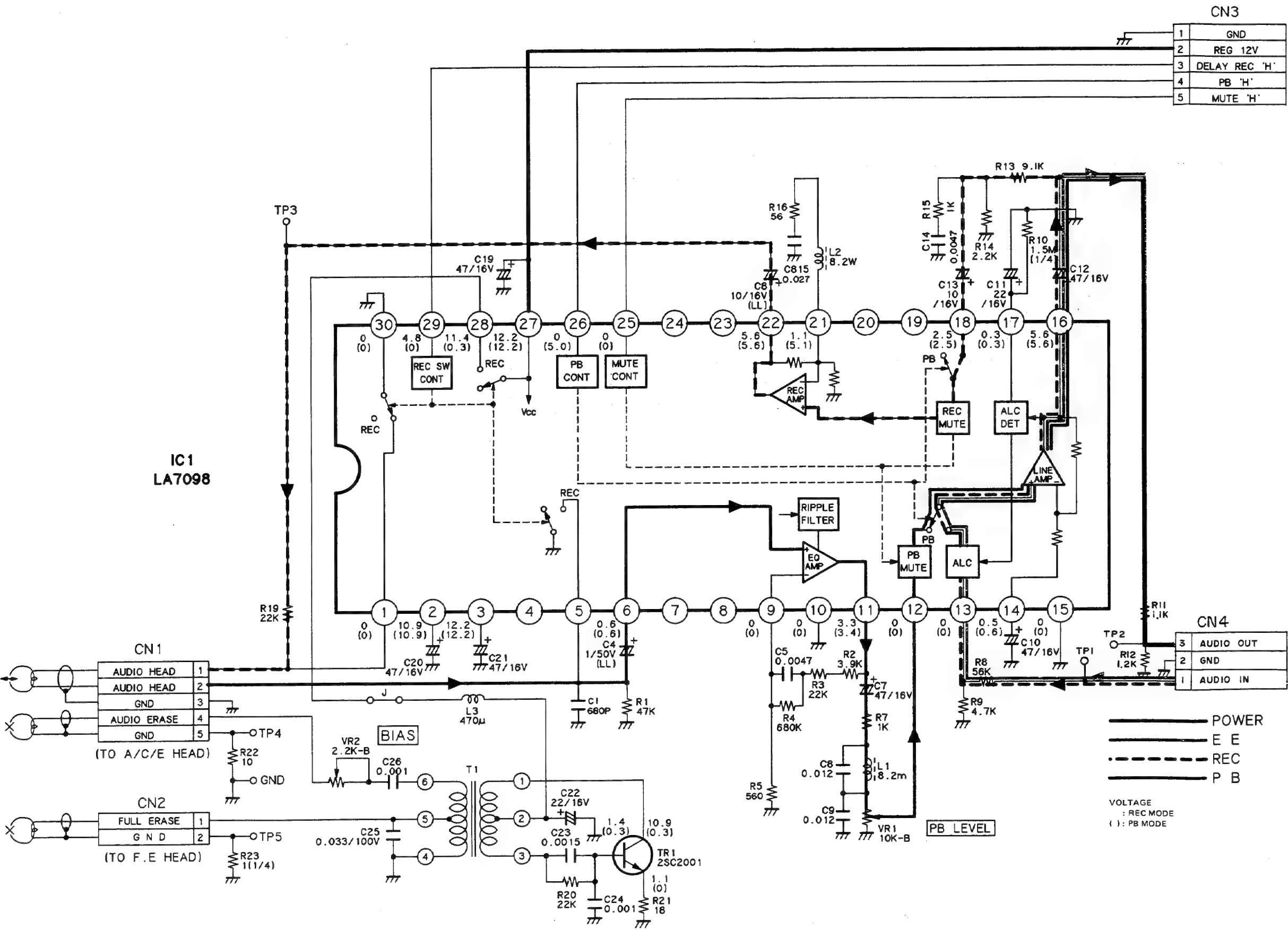
VOLTAGE
: REC MODE
(): PB MODE

| | | | | | |
|---|---|---|---|---|--|
| <p>W1</p> <p>TP1212 REC INPUT SIGNAL X=10μS Y=200mV</p> | <p>W2</p> <p>IC1201 15pin REC LUMINANCE SIGNAL X=10μS Y=100mV</p> | <p>W3</p> <p>TP1203 REC PRE EMPHASIS OUT PUT X=10μS Y=200mV</p> | <p>W4</p> <p>TP1201 REC FM MODULATOR OUTPUT X=200nS Y=500mV</p> | <p>W5</p> <p>IC1401 25pin REC CHROMINANCE SIGNAL X=10μS Y=50mV</p> | <p>W6</p> <p>TR1416 Emitter REC REC CONVERTED CHROMINANCE SIGNAL X=10μS Y=50mV</p> |
| <p>W7</p> <p>TP501 (PRE AMP) REC REC FM SIGNAL X=10μS Y=50mV</p> | <p>W8</p> <p>TP1204 REC COMPOSITE SYNC PULSE X=20μS Y=2V</p> | <p>W9</p> <p>TR1402 Emitter REC 4.43 MHz VXO OUTPUT X=100nS Y=100mV</p> | <p>W10</p> <p>IC1401 20pin REC 5.06 MHz MAIN CONVERTOR INPUT X=100nS Y=50mV</p> | <p>W11</p> <p>TP1402 PB PB FM SIGNAL X=10μS Y=50mV</p> | <p>W12</p> <p>TP1207 PB LINE NOISE CANCELAR CHECK POINT X=10μS Y=50mV</p> |
| <p>W13</p> <p>IC1201 6pin PB PB LUMINANCE SIGNAL X=10μS Y=50mV</p> | <p>W14</p> <p>IC1401 34pin PB PB CONVERTED CHROMINANCE SIGNAL X=10μS Y=50mV</p> | <p>W15</p> <p>IC1201 12pin PB PB CHROMINANCE SIGNAL X=10μS Y=100mV</p> | <p>W16</p> <p>TP1201 PB PB VIDEO SIGNAL X=10μS Y=500mV</p> | <p>W17</p> <p>IC1401 55pin REC BURST GATE PULSE X=20μS/DIV Y=2V/DIV</p> | <p>W18</p> <p>TP1401 REC (PAL) SECAM DETECTOR X=50μS/DIV Y=1V/DIV</p> |
| <p>W19</p> <p>TP1401 REC (SECAM) SECAM DETECTOR X=50μS/DIV Y=1V/DIV</p> | | | | | |

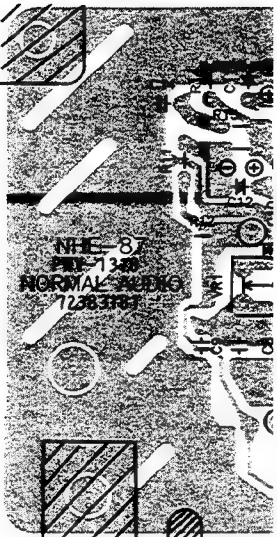
4-5. SYSCON/SERVO/VIDEO CIRCUIT BOARD

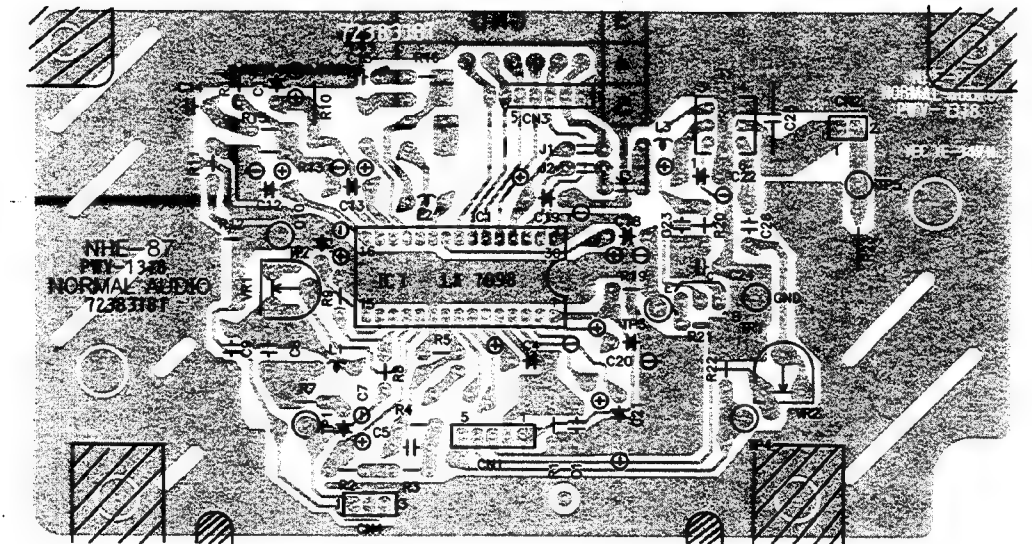


4-6. AUDIO SCHEMATIC DIAGRAM

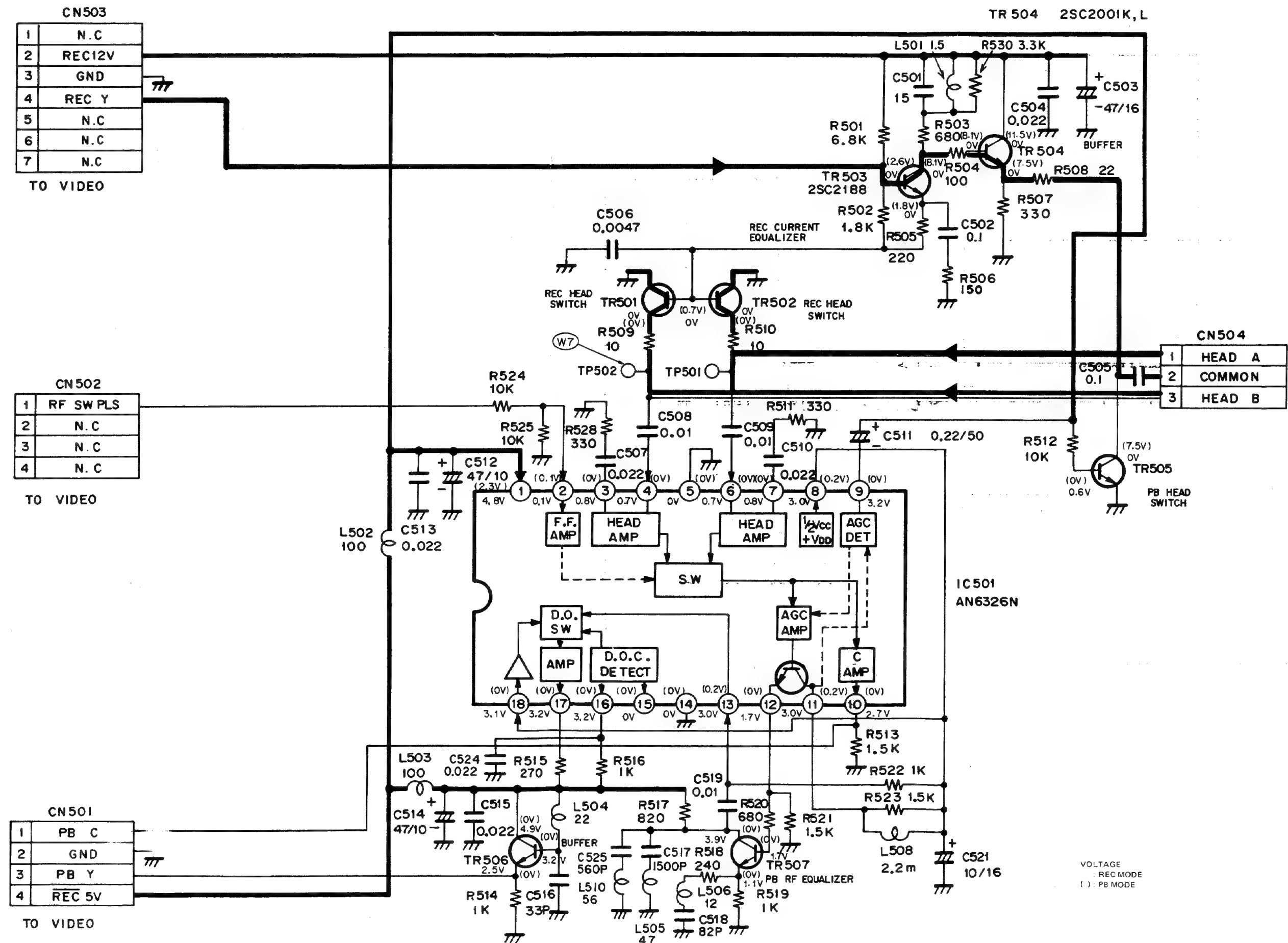


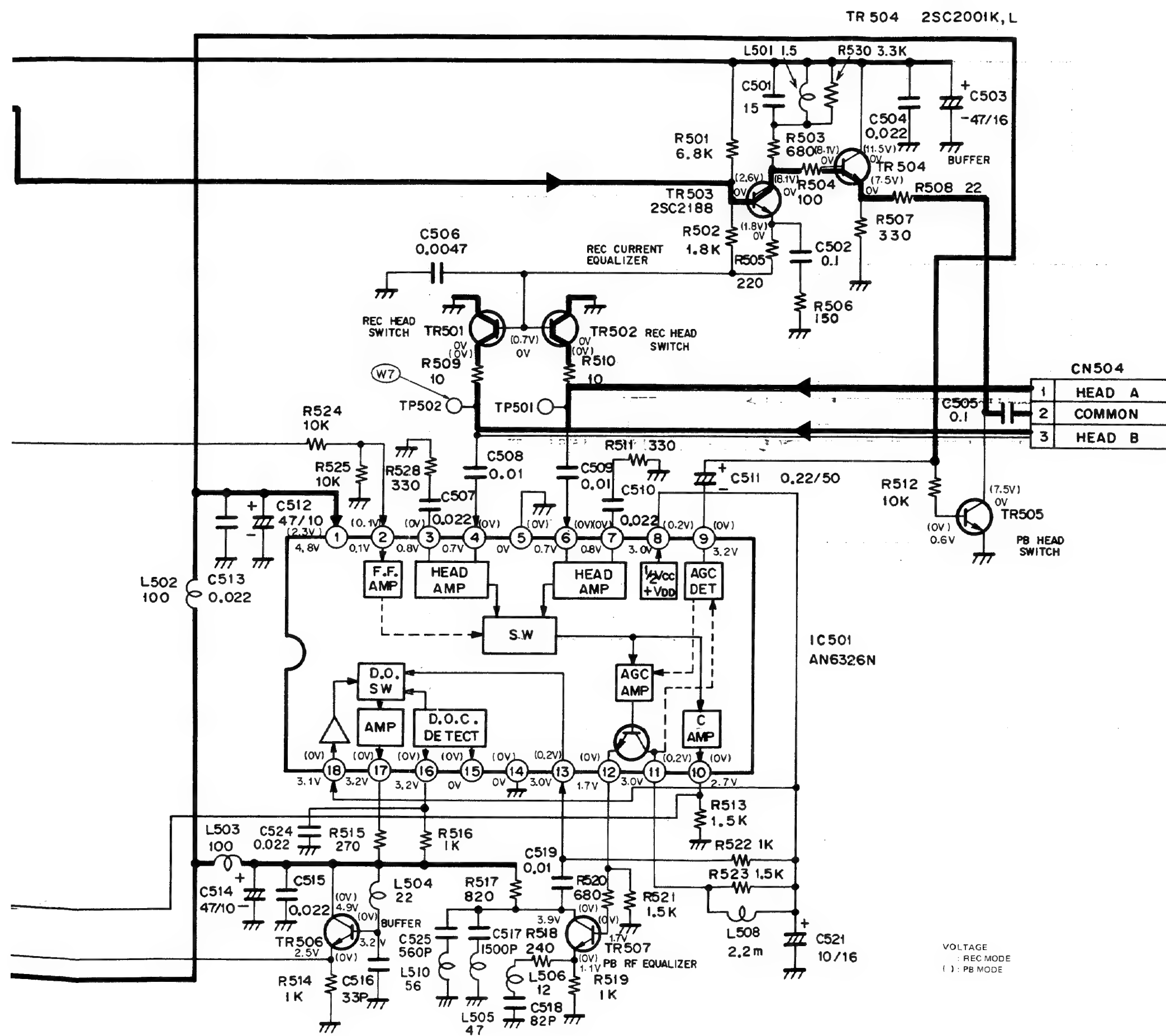
4-7. AUDIO CIRC



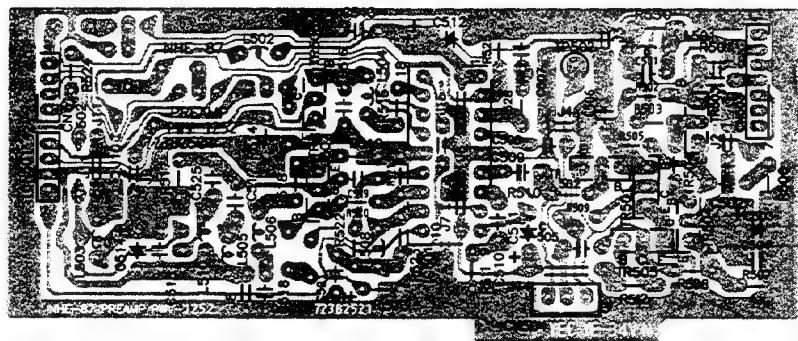


4-8. PRE AMP SCHEMATIC DIAGRAM

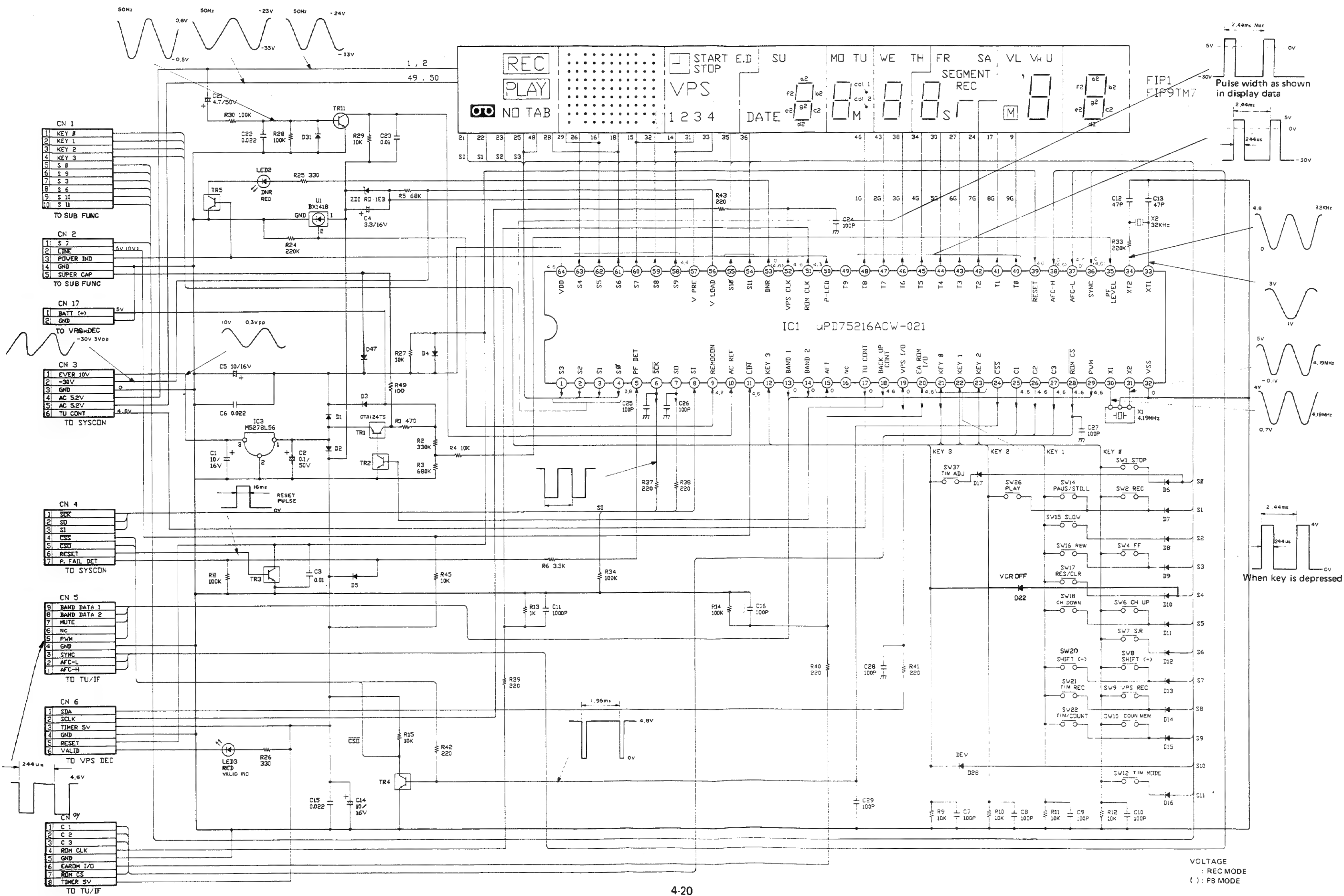




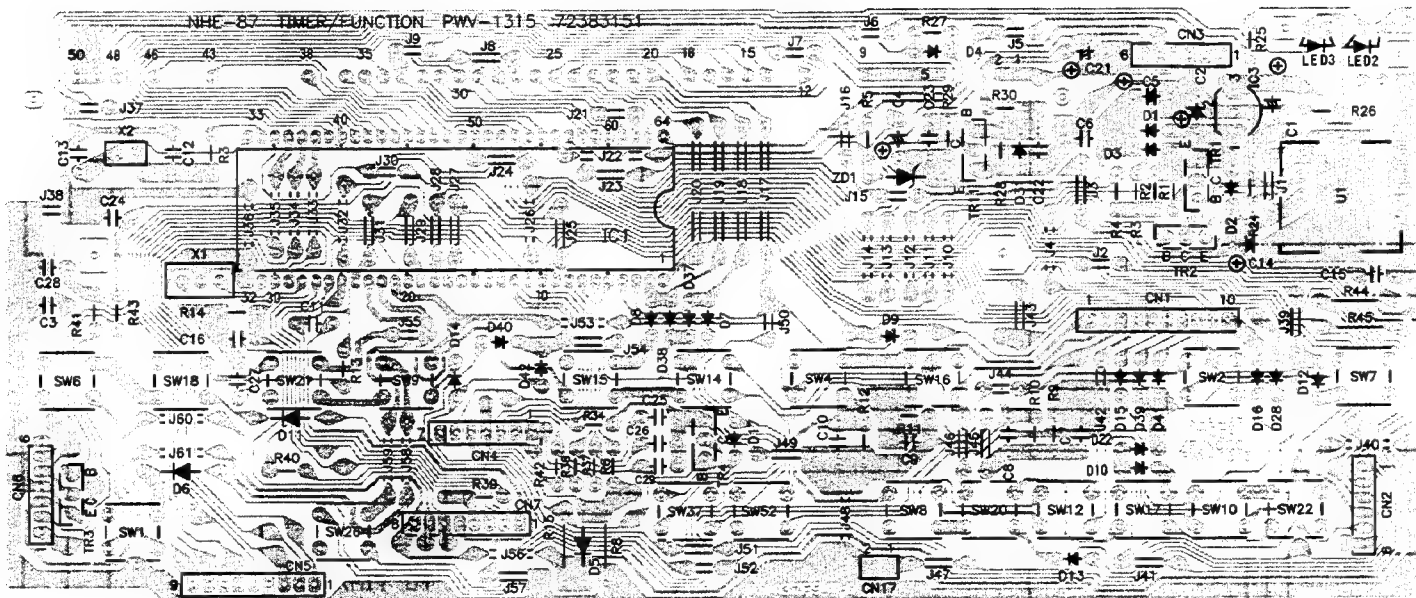
4-9. PRE AMP CIRCUIT BOARD



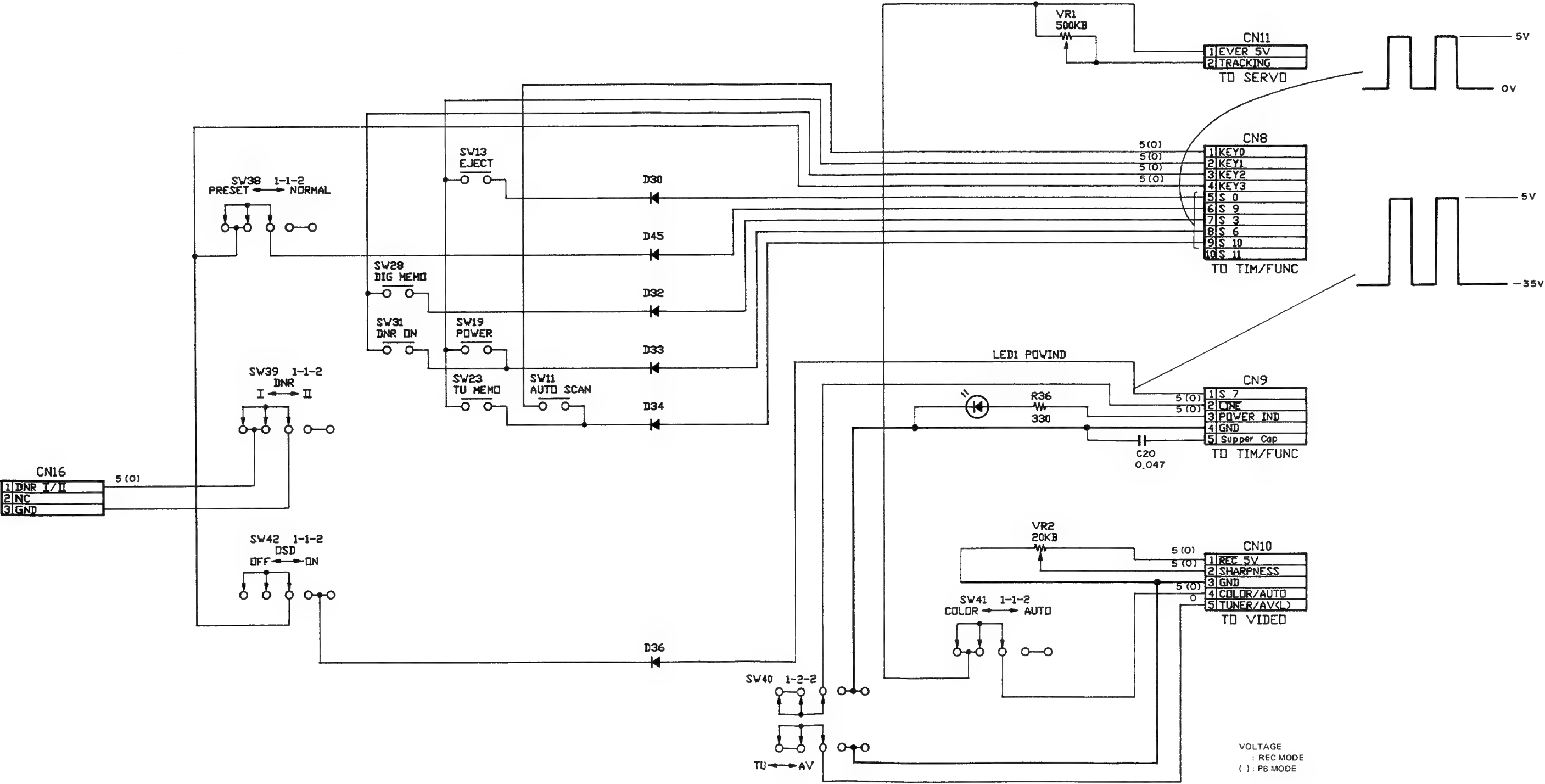
4-10. TIMER FUNCTION SCHEMATIC DIAGRAM



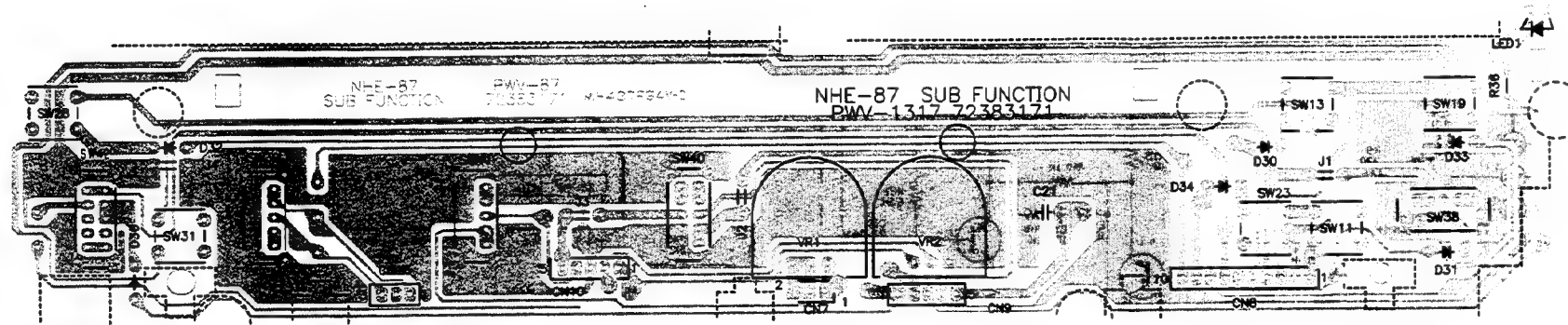
4-11. TIMER FUNCTION CIRCUIT BOARD



4-12. SUB FUNCTION SCHEMATIC DIAGRAM

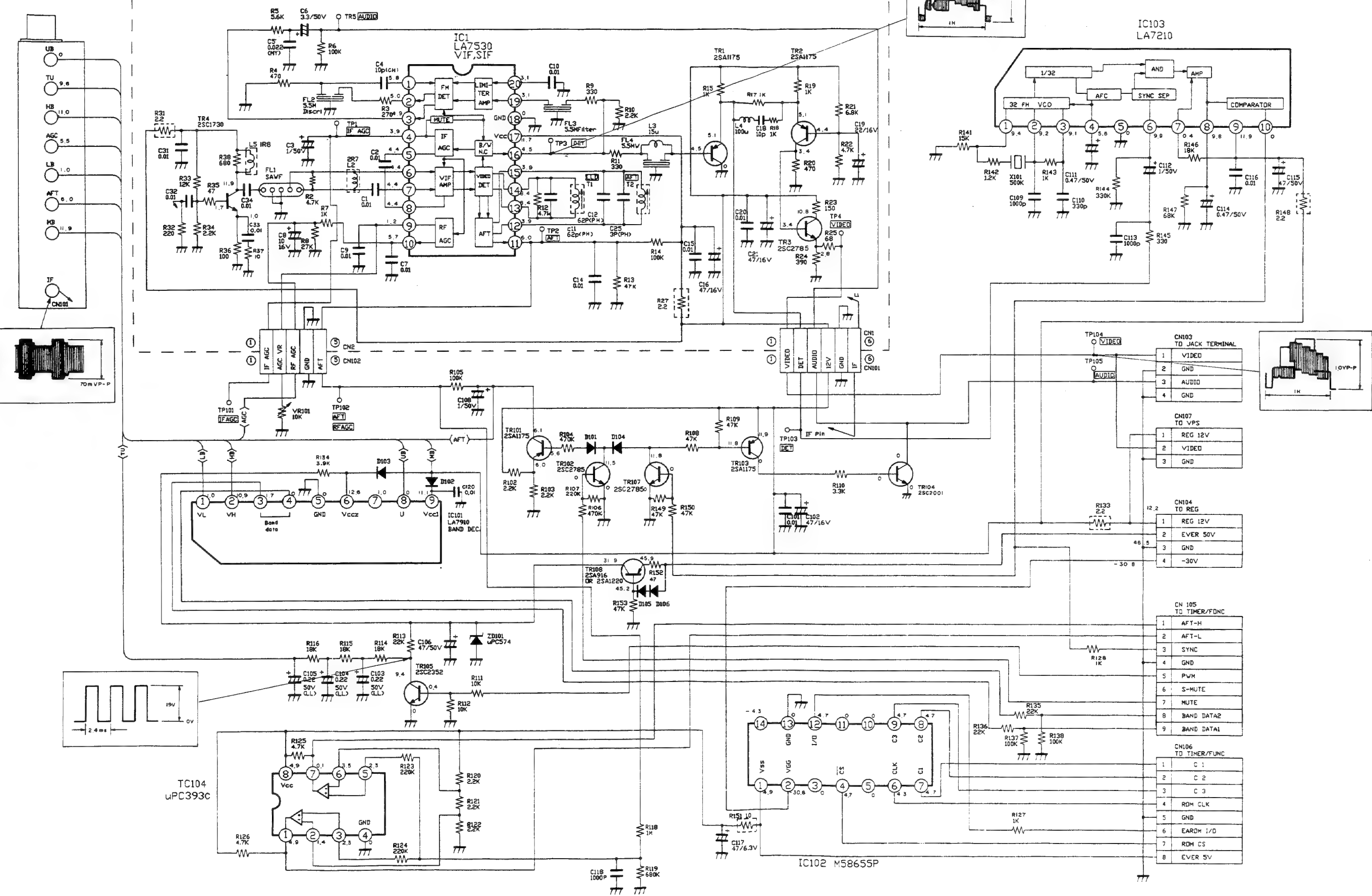


4-13. SUB FUNCTION CIRCUIT BOARD

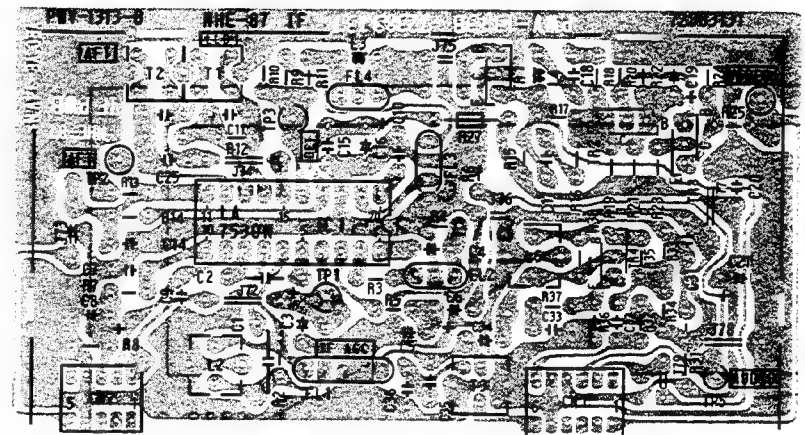
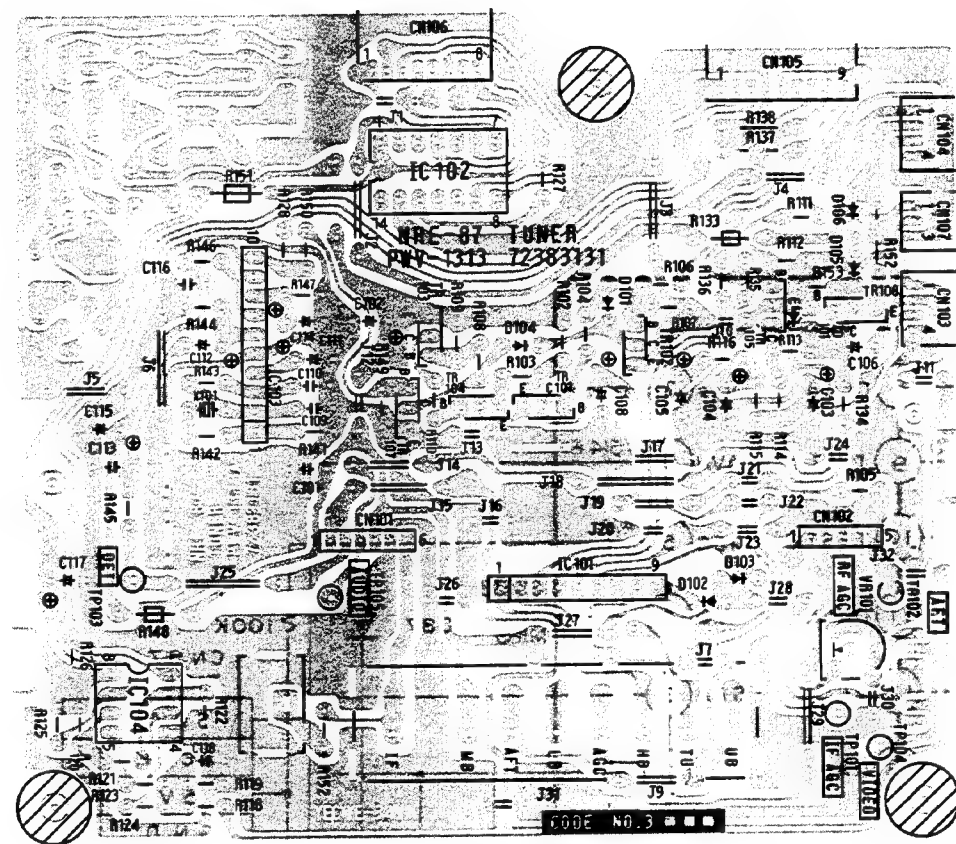


4-14. TUNER/IF SCHEMATIC DIAGRAM

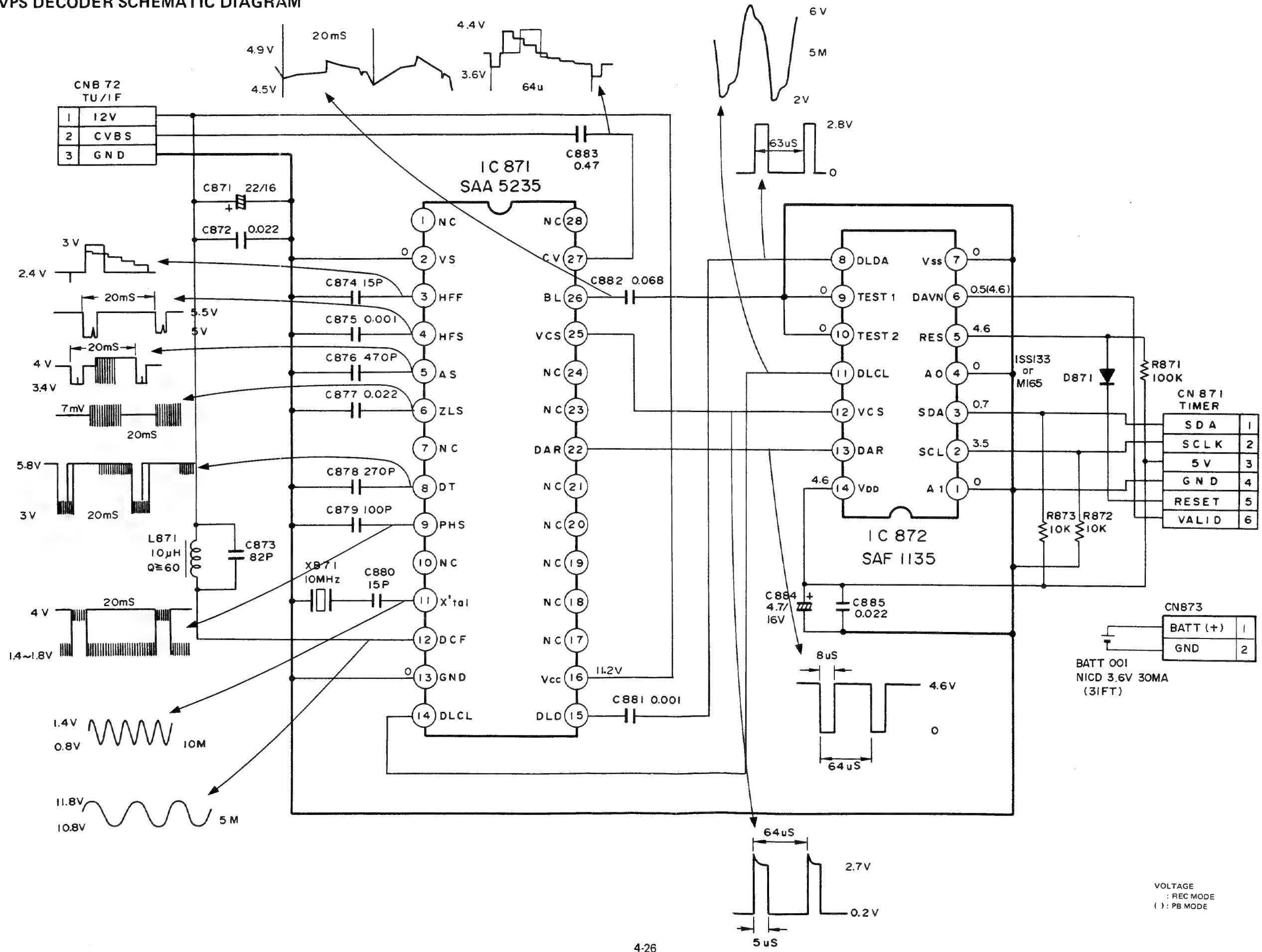
UHF/VHF TUNER MODULE



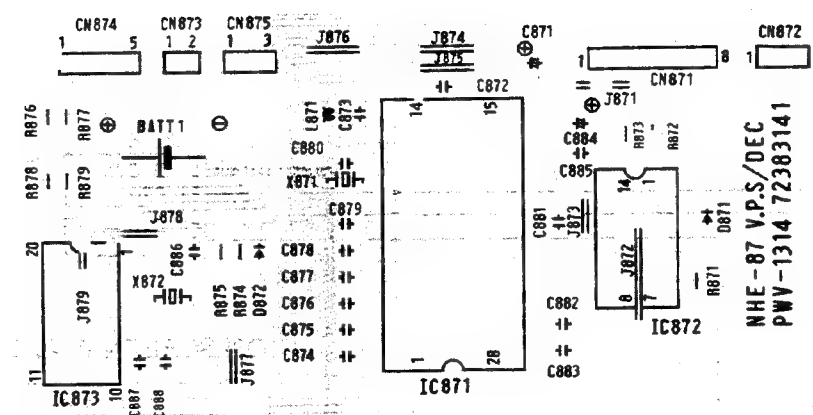
4-15. TUNER/IF CIRCUIT BOARD



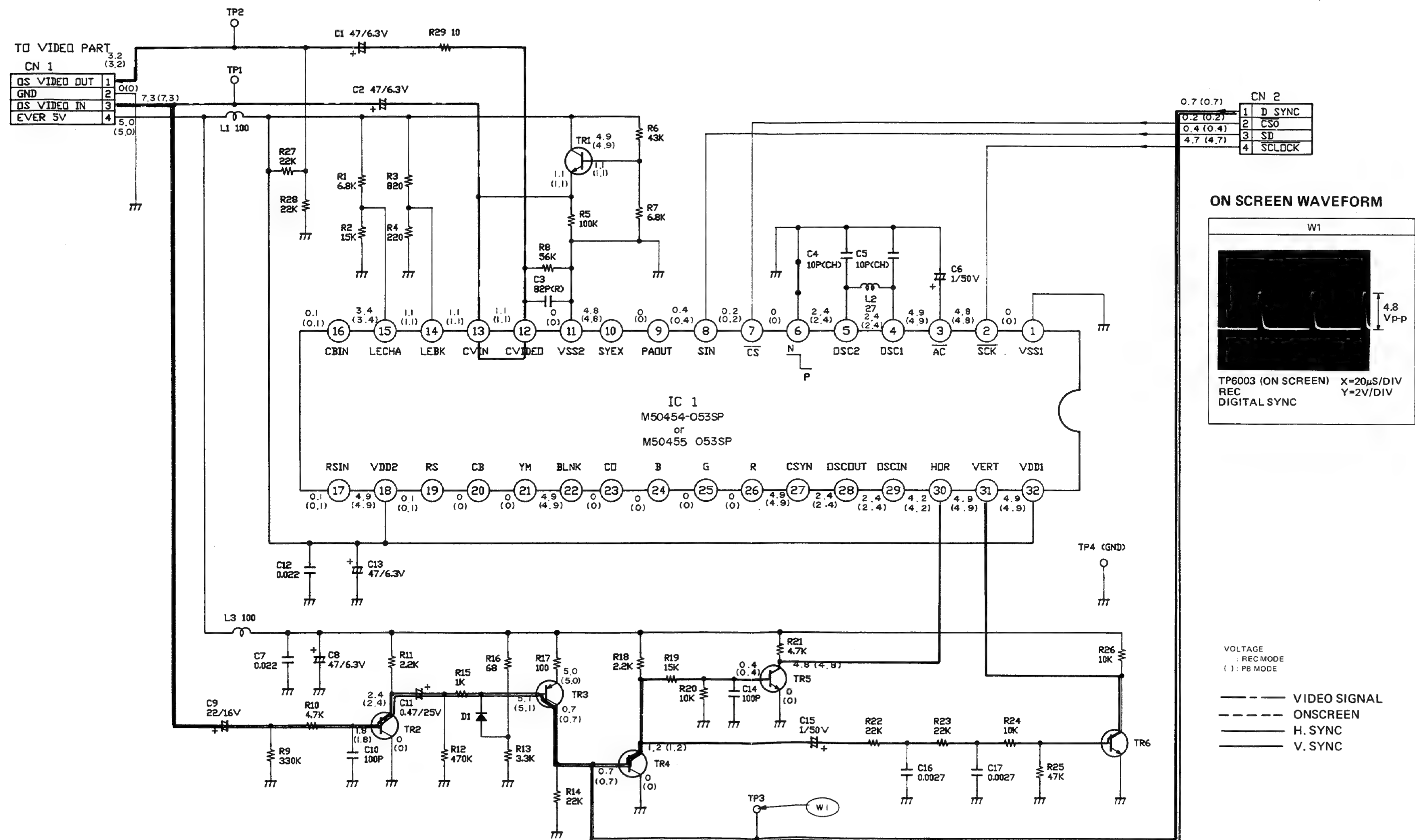
4-16. VPS DECODER SCHEMATIC DIAGRAM



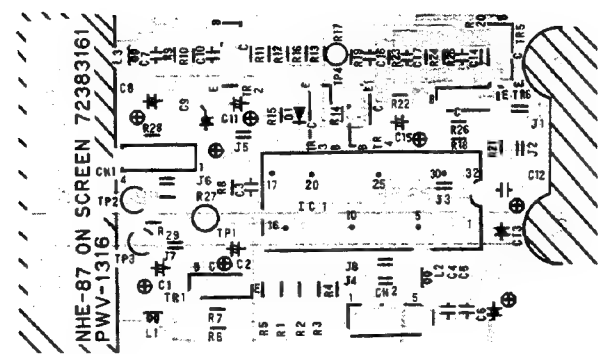
4-17. VPS DECODER CIRCUIT BOARD



4-18. ON SCREEN SCHEMATIC DIAGRAM



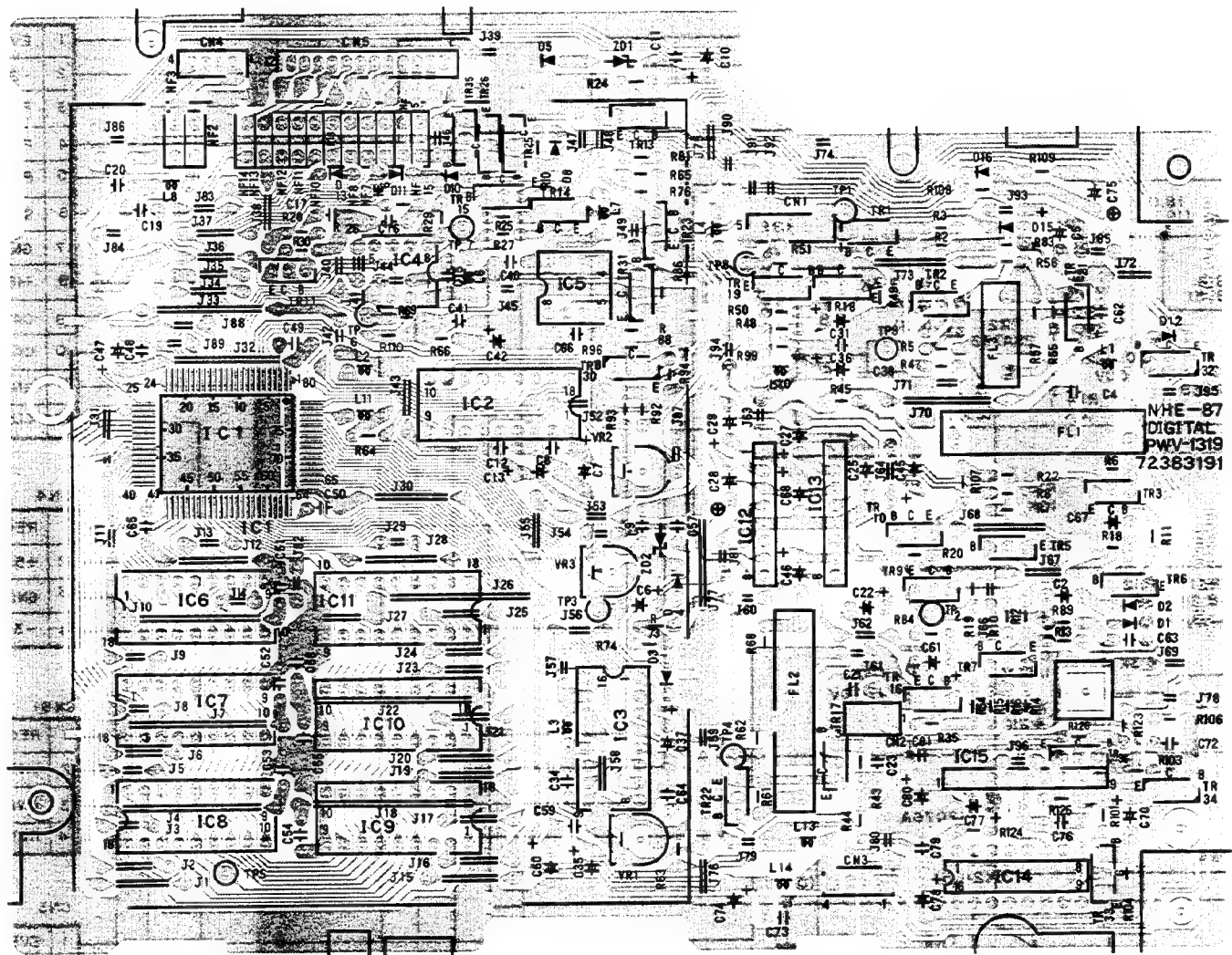
4-19. ON SCREEN CIRCUIT BOARD



SUB NR
 DNR
 SLOW STILL DM

VOLTAGE
 MODE

4-21. DIGITAL CIRCUIT BOARD



AC 220V 50Hz

SW1

C92 0.1

F91 250V 2A

L91

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

TR8 2SC2785

TR5 2SD1266

C7 3300/25V

C9 470/25V

C11 100P

R9 0.47 1W

TR9 AA1A4M

TR12 2SB1038

TR11 AN1F4M

IC30 M5237L

D30 IS2076A

D9 IS2076A

C8 47/16V

C32 47/16V

C33 1/50V

R34 4.3K

R33 4.3K

R32 680

R31 8.2K

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

TI

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

TR8 2SC2785

TR5 2SD1266

C7 3300/25V

C9 470/25V

C11 100P

R9 0.47 1W

TR9 AA1A4M

TR12 2SB1038

TR11 AN1F4M

IC30 M5237L

D30 IS2076A

D9 IS2076A

C8 47/16V

C32 47/16V

C33 1/50V

R34 4.3K

R33 4.3K

R32 680

R31 8.2K

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

TI

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

TR8 2SC2785

TR5 2SD1266

C7 3300/25V

C9 470/25V

C11 100P

R9 0.47 1W

TR9 AA1A4M

TR12 2SB1038

TR11 AN1F4M

IC30 M5237L

D30 IS2076A

D9 IS2076A

C8 47/16V

C32 47/16V

C33 1/50V

R34 4.3K

R33 4.3K

R32 680

R31 8.2K

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

TI

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

TR8 2SC2785

TR5 2SD1266

C7 3300/25V

C9 470/25V

C11 100P

R9 0.47 1W

TR9 AA1A4M

TR12 2SB1038

TR11 AN1F4M

IC30 M5237L

D30 IS2076A

D9 IS2076A

C8 47/16V

C32 47/16V

C33 1/50V

R34 4.3K

R33 4.3K

R32 680

R31 8.2K

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

TI

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

TR8 2SC2785

TR5 2SD1266

C7 3300/25V

C9 470/25V

C11 100P

R9 0.47 1W

TR9 AA1A4M

TR12 2SB1038

TR11 AN1F4M

IC30 M5237L

D30 IS2076A

D9 IS2076A

C8 47/16V

C32 47/16V

C33 1/50V

R34 4.3K

R33 4.3K

R32 680

R31 8.2K

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

TI

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

TR8 2SC2785

TR5 2SD1266

C7 3300/25V

C9 470/25V

C11 100P

R9 0.47 1W

TR9 AA1A4M

TR12 2SB1038

TR11 AN1F4M

IC30 M5237L

D30 IS2076A

D9 IS2076A

C8 47/16V

C32 47/16V

C33 1/50V

R34 4.3K

R33 4.3K

R32 680

R31 8.2K

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

TI

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC5.3 (AC5.3)

AC43.7 (AC44.1)

D4 11E1

C2 2200/35V

C22 47/100V

C23 1/100V

D10 57.2 ERA15-02(-57.6)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

R12 15K

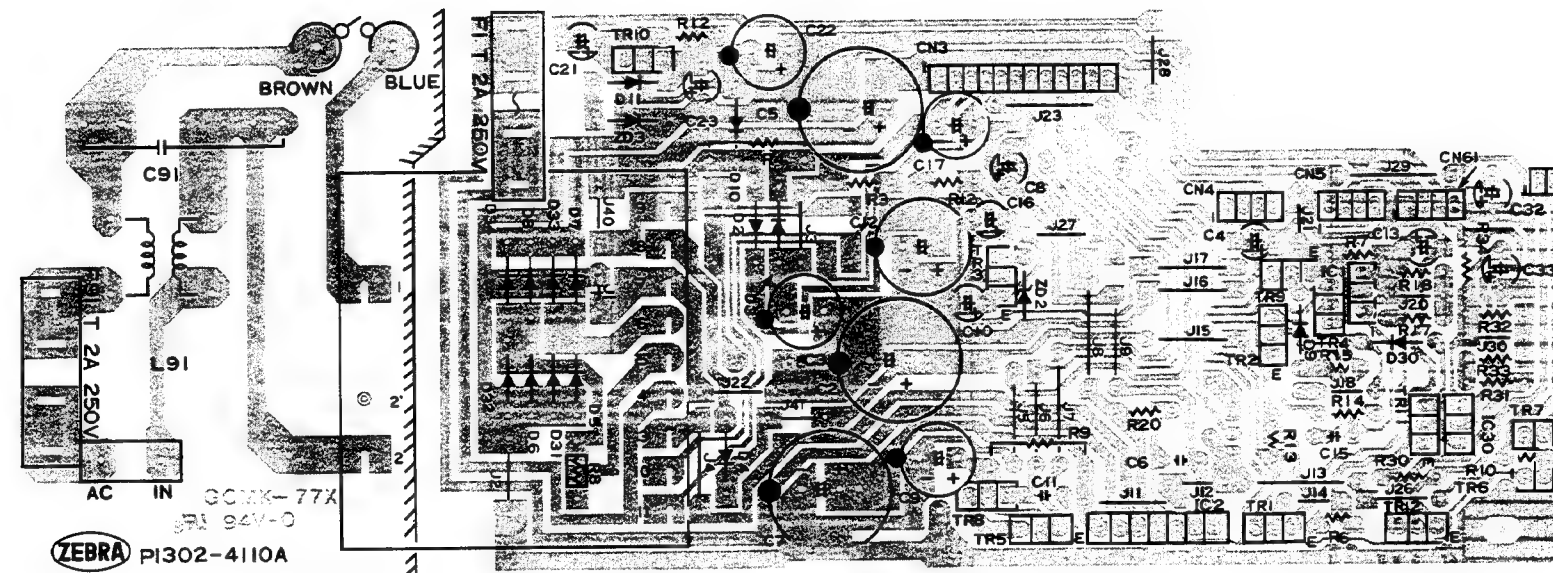
R10 2.7K

TR7 2SD1286

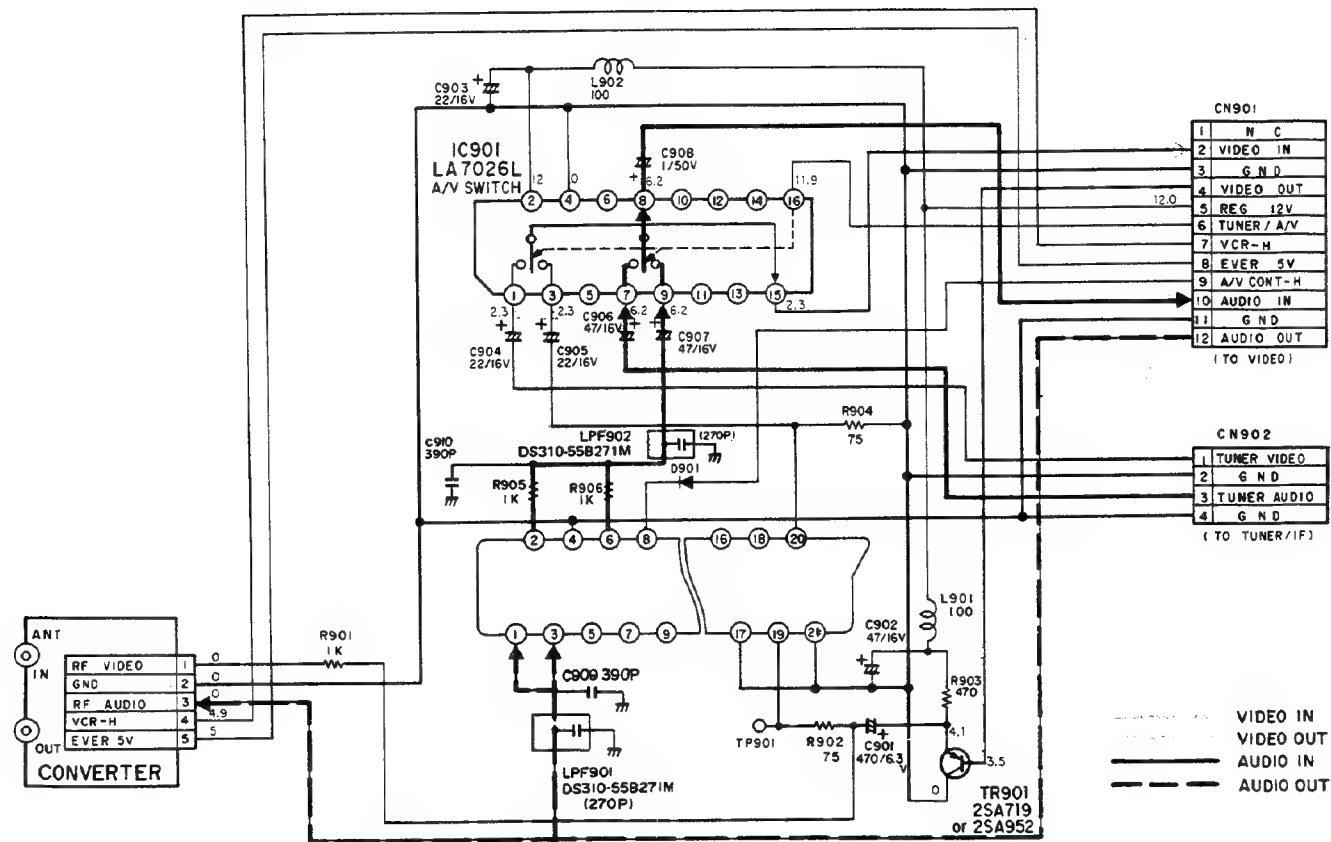
TR6 AA1A4M

TR8 2SC2785

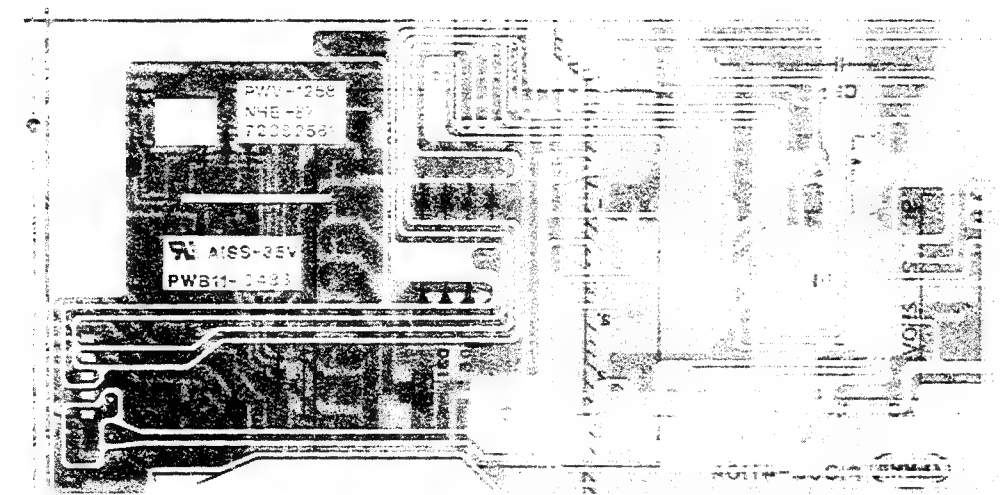
4-23. POWER/REGULATOR CIRCUIT BOARD



4-24. JACK TERMINAL SCHEMATIC DIAGRAM

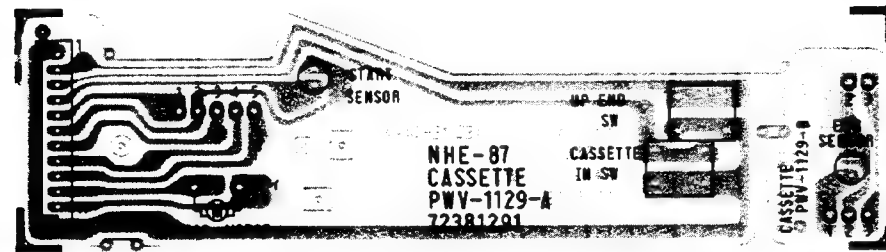


4-25. JACK TERMINAL CIRCUIT BOARD



4-26. OTHER MINI-CIRCUIT BOARD

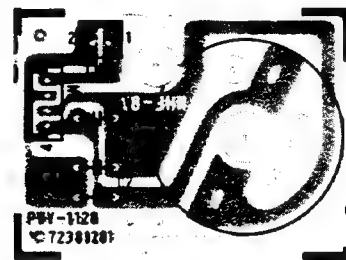
- CASSETTE CIRCUIT BOARD



- **MODE SENSOR CIRCUIT BOARD**



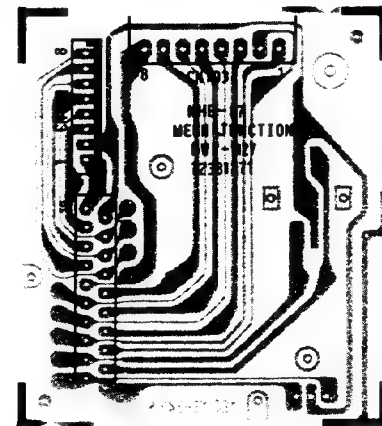
- MC CONTROL CIRCUIT BOARD



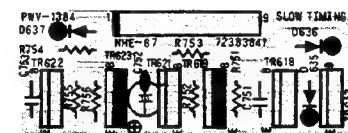
● DRUM JUNCTION CIRCUIT BOARD



- MECHA JUNCTION CIRCUIT BOARD



- SLOW TIMING CIRCUIT BOARD



● SUB DIGITAL CIRCUIT BOARD

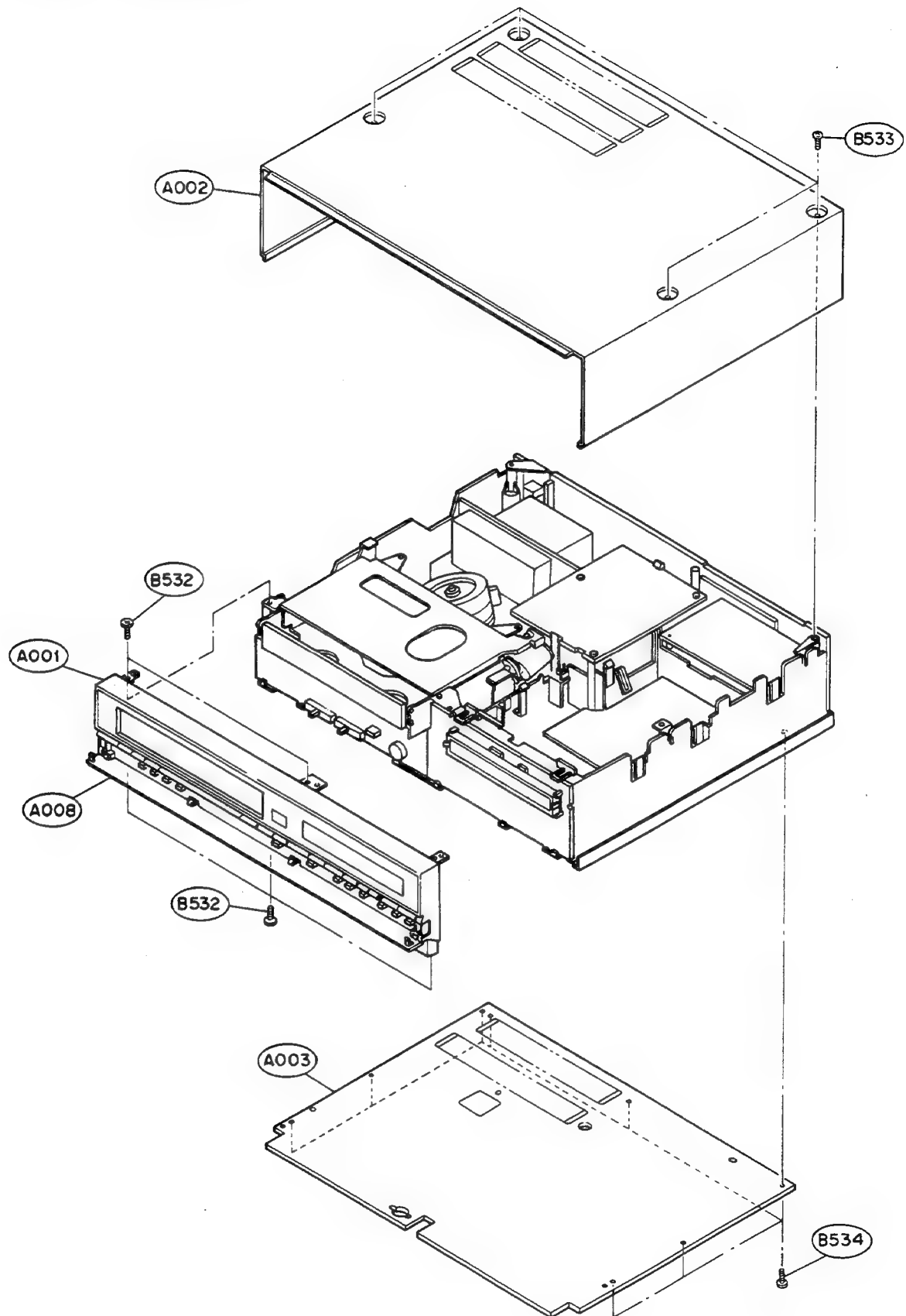


DIGITAL TRANSISTOR INFORMATION

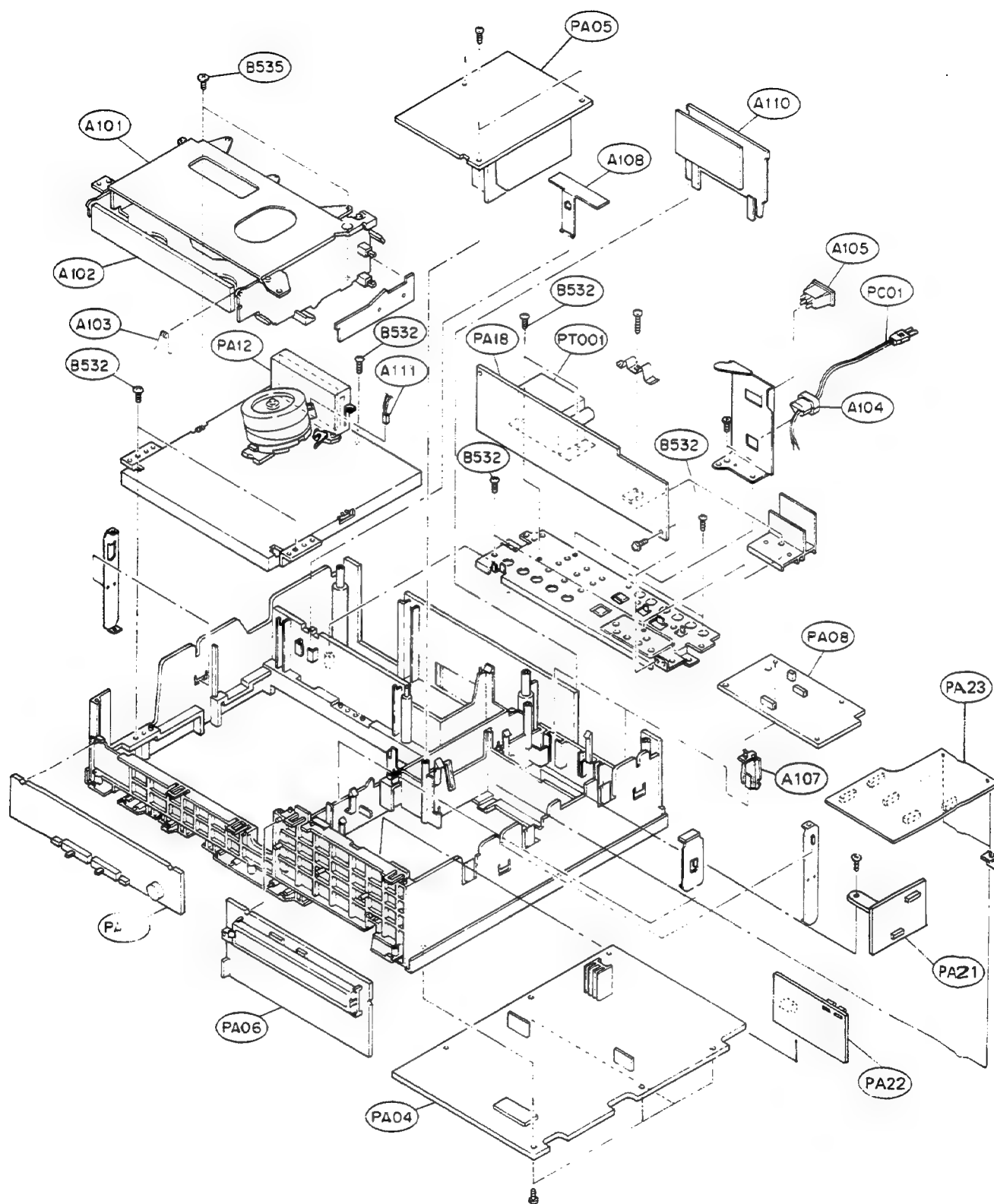
| SYMBOL | FIGURE |
|------------------|--------|
| BA1L4M | |
| BN1L4M | |
| BA1F4M | |
| BN1F4M | |
| BN1A4M AN1A4M | |
| BA1A4M AA1A4M | |
| UN4122 | |
| BB1A3Z | |
| | |
| | |

SECTION 5 EXPLODED VIEW

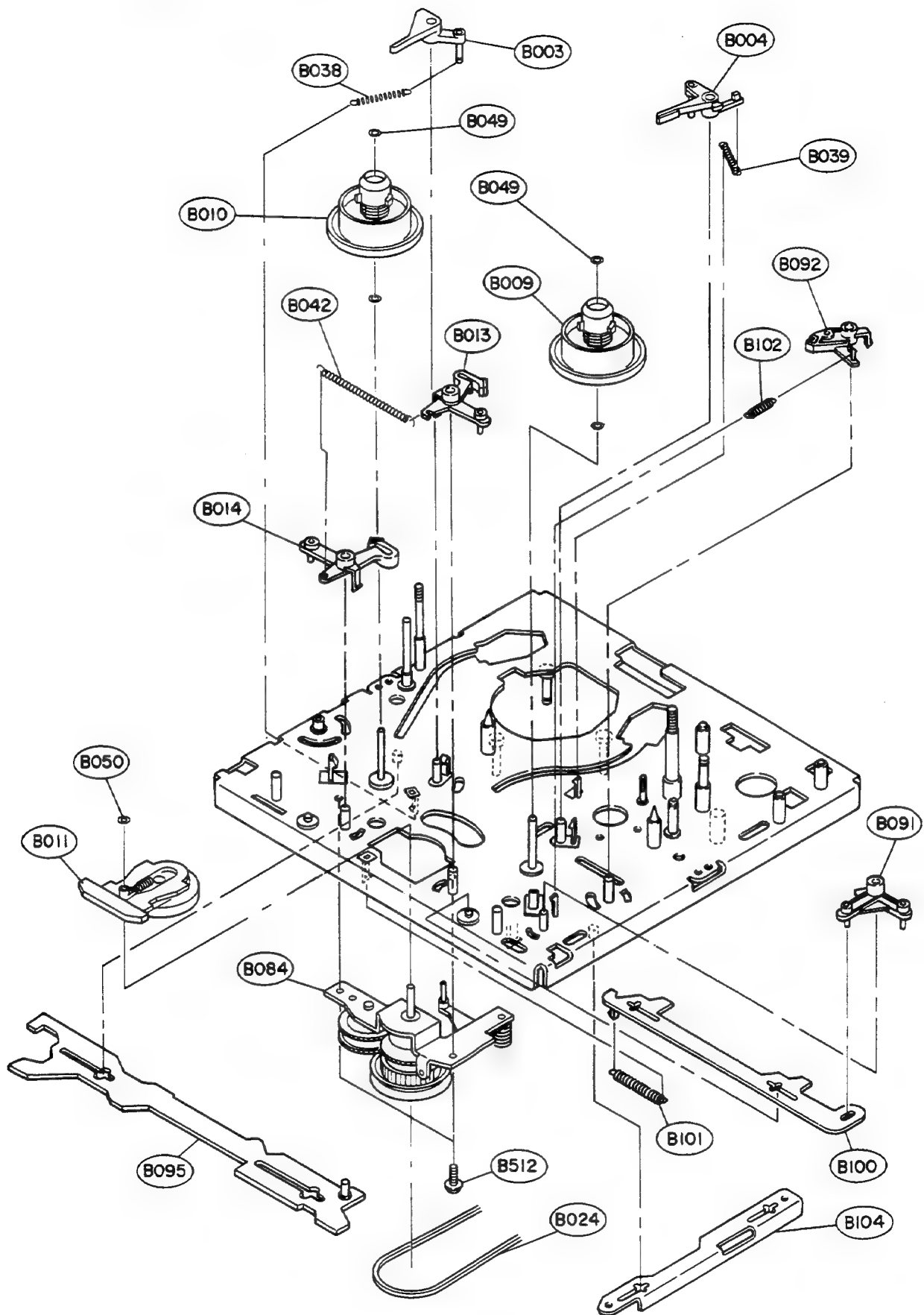
5-1. CABINET SECTION

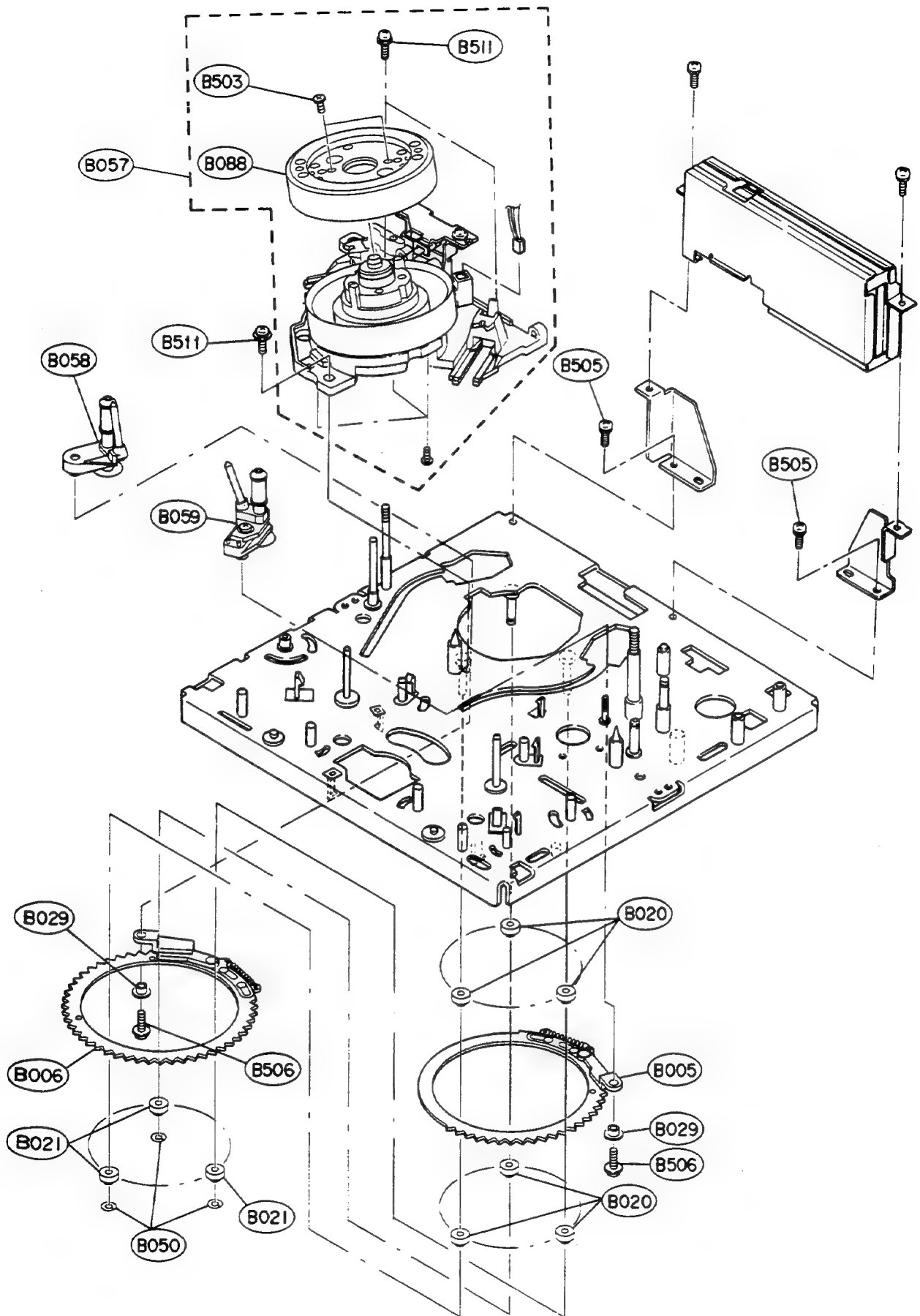


5-2. CHASSIS SECTION

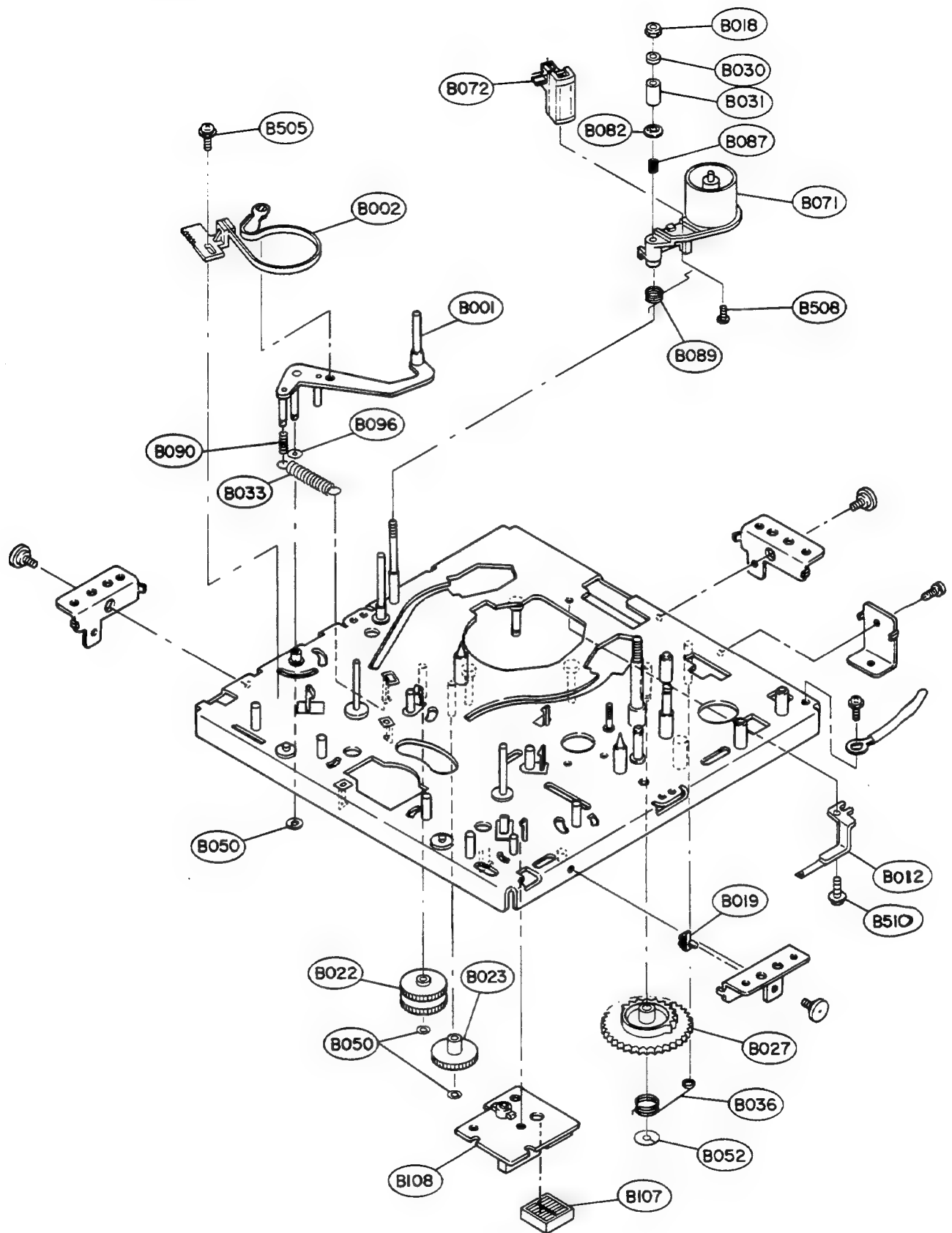


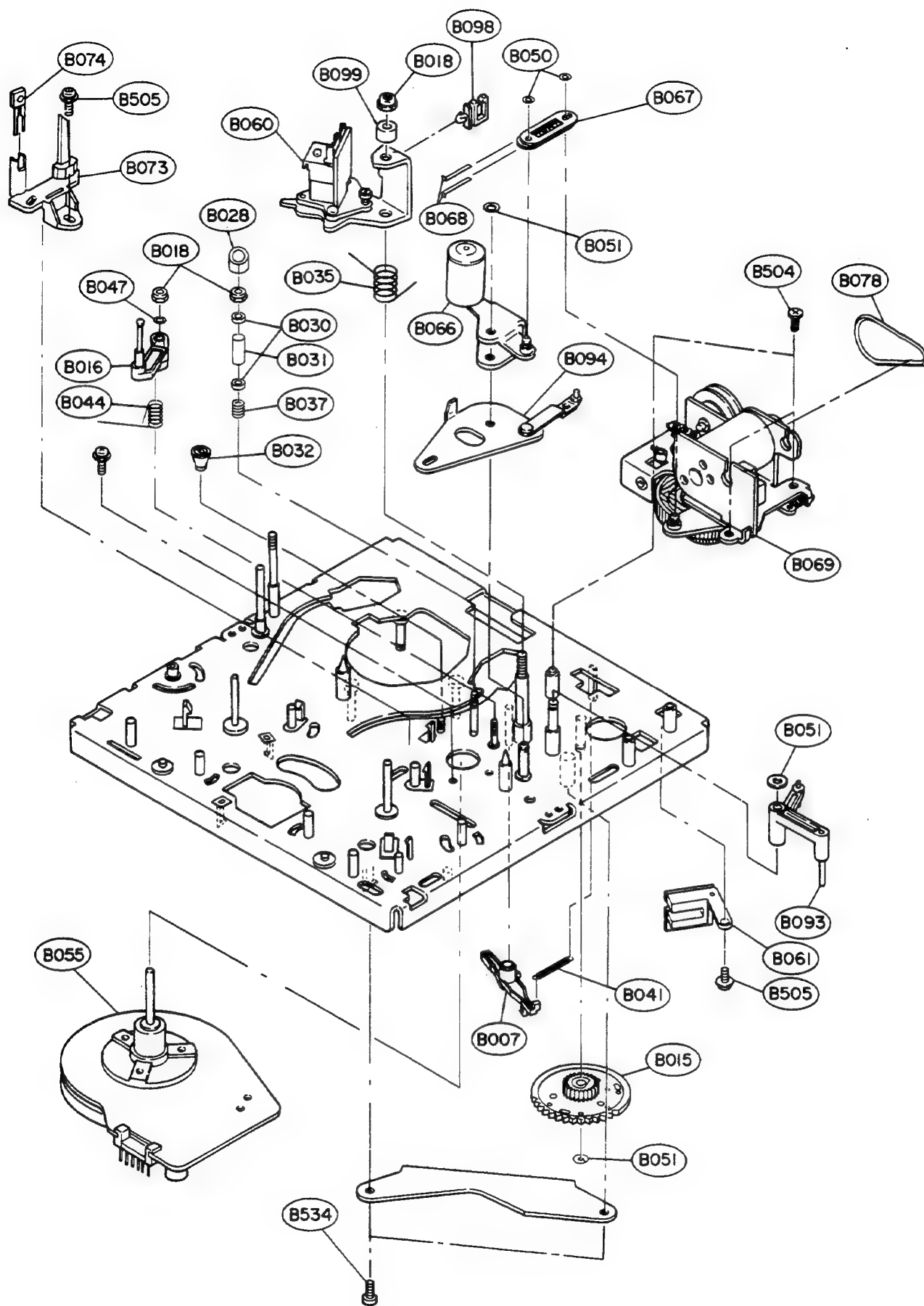
5-3. MECHANISM (I) SECTION



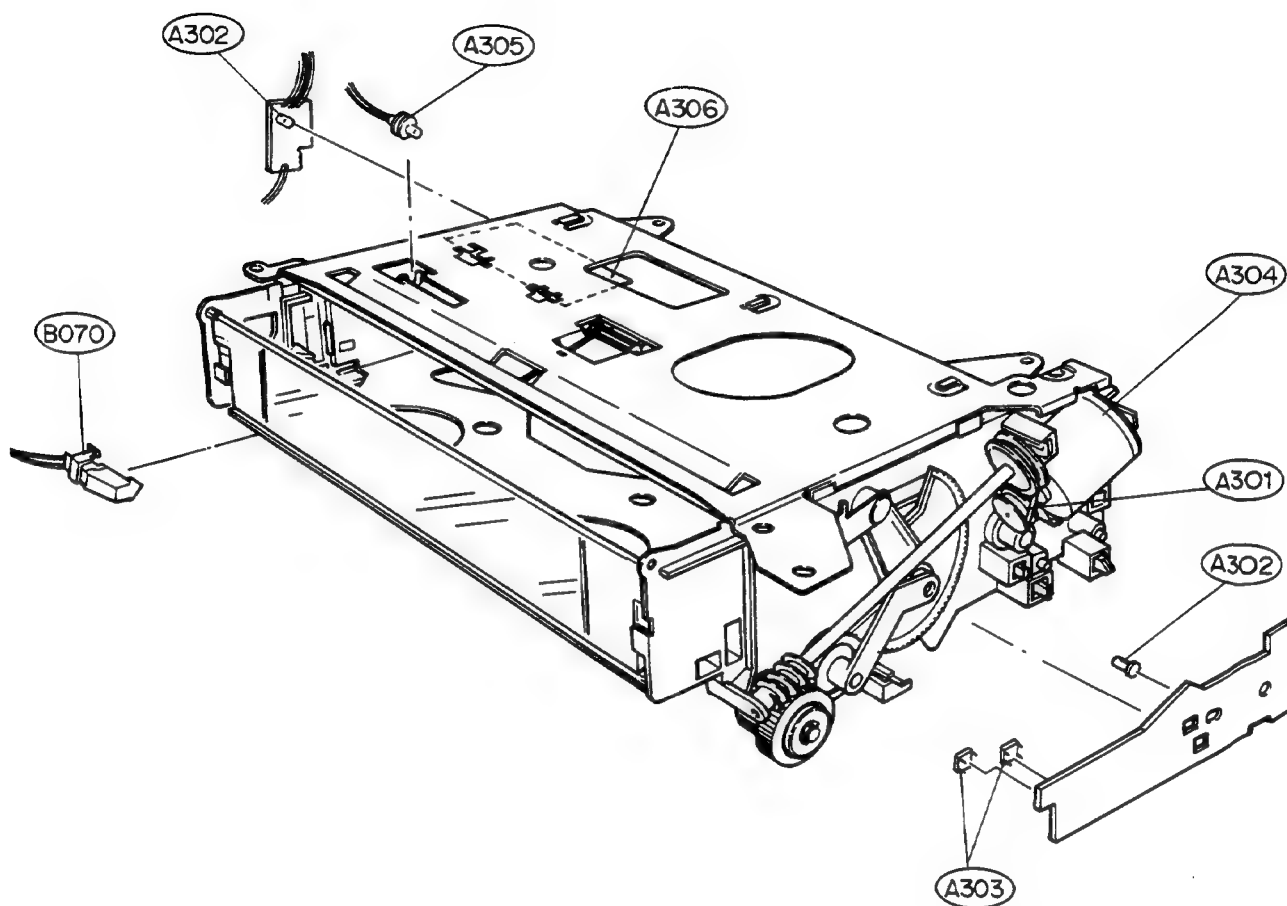


5-4. MECHANISM (II) SECTION

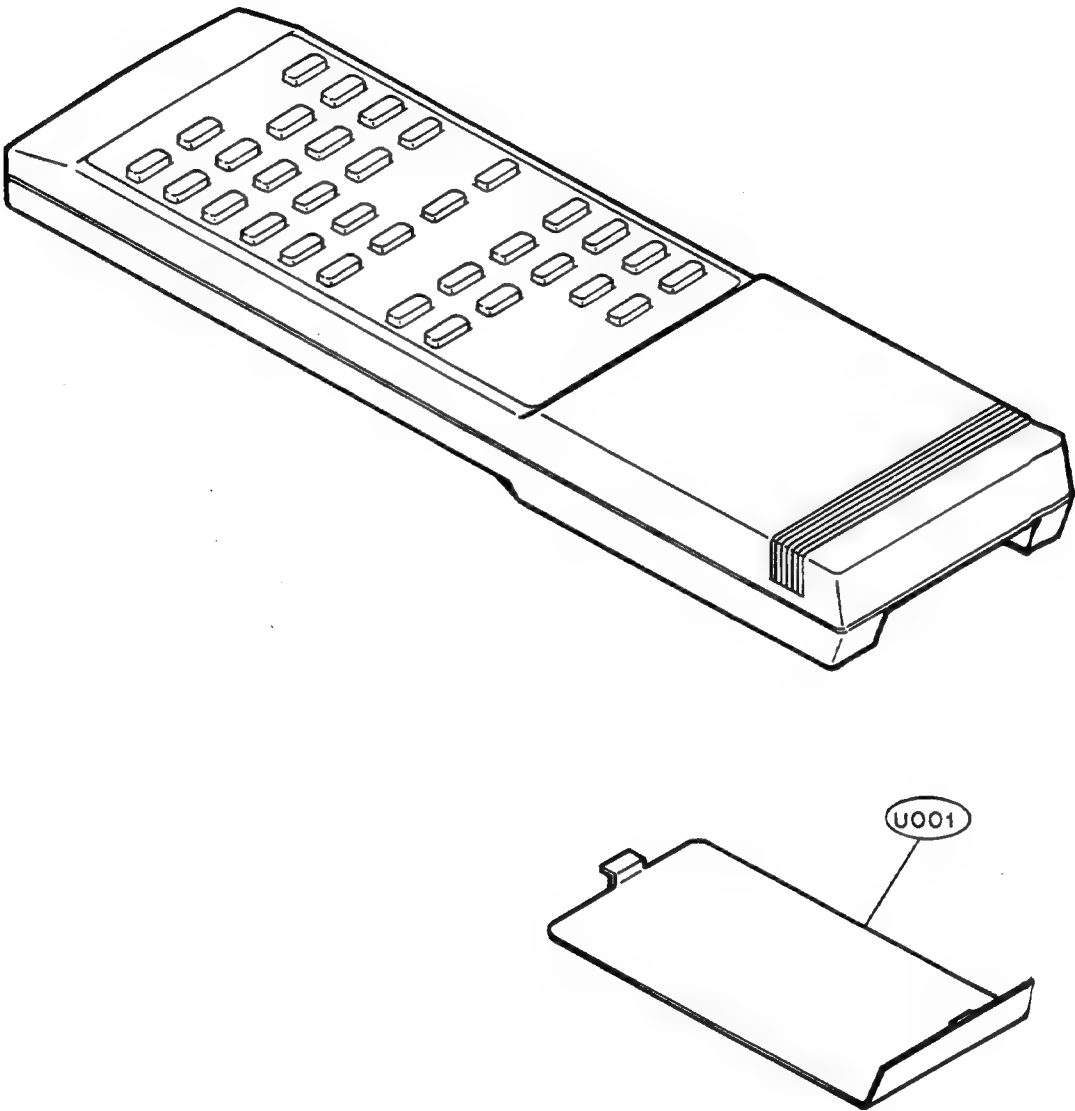




5-5. CASSETTE HOUSING SECTION



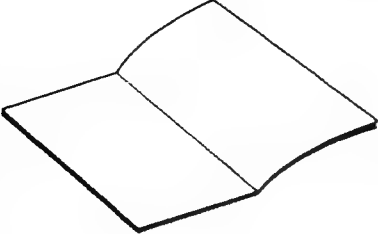

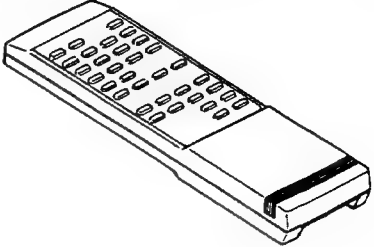
5-6. WIRELESS REMOTE CONTROL SECTION



WIRELESS REMOTE CONTROL PARTS LIST

| SYMBOL | PART NO. | DESCRIPTION | Q'TY |
|--------|----------|--------------|------|
| U001 | 18940256 | BATTERY CASE | 1 |

5-7. ACCESSORIES

| | | |
|---|---|---|
| <p>K003</p>  | <p>K007</p>  | <p>K008</p>  |
| | | |

| REF. NO | PART NO. | DESCRIPTION |
|---------|----------|----------------------------|
| K003 | 78816751 | INSTRUCTION MANUAL |
| K007 | 79559054 | IEC RF CABLE (1.2M) |
| K008 | 79799463 | WIRESS REMOTE CONTROL UNIT |

SECTION 6

REPLACEMENT PARTS LIST

(87. 07. 07)

| ASSEMBLY | PAGE |
|--|------|
| SYS/SER/VID PWB ASSEMBLY | 6-2 |
| NORMAL AUDIO PWB ASSEMBLY | 6-5 |
| TIMER/FUNCTION PWB ASSEMBLY | 6-6 |
| SUB FUNCTION PWB ASSEMBLY | 6-7 |
| TUNER/IF PWB ASSEMBLY | 6-8 |
| PRE AMP PWB ASSEMBLY | 6-9 |
| ON SCREEN PWB ASSEMBLY | 6-10 |
| DIGITAL PWB ASSEMBLY | 6-11 |
| VPS DECODER PWB ASSEMBLY | 6-13 |
| CHASSIS PWB ASSEMBLY | 6-14 |
| MECHANICAL PWB ASSEMBLY | 6-14 |
| SET PWB ASSEMBLY | 6-16 |
| PACKING PWB ASSEMBLY | 6-16 |
| POWER REGULATOR PWB ASSEMBLY | 6-16 |
| JACK TERMINAL PWB ASSEMBLY | 6-17 |
| CASSETTE HOUSING ASSEMBLY | 6-17 |

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|---------------------|----------|---------------------------|-----|
| *** ICS *** | | | |
| IC1604 | 37101117 | IC UPC324C | 1 |
| IC1612 | 37101127 | IC UPC-393C | 1 |
| IC1207 | 37101159 | LA7016 ANALOG SW | 1 |
| IC1402 | 37101240 | HA7025L (SECAM DET) | 1 |
| IC1206 | 37101268 | IC HA17805 | 1 |
| IC1201 | 37101312 | IC AN3215K (REC Y-PROCESS | 1 |
| IC1202 | 37101313 | IC AN3321K (PH Y PROCESS) | 1 |
| IC1603 | 37101323 | IC BA15218 (OP AMP) | 1 |
| IC1208 | 37101326 | IC LA7308 | 1 |
| IC1401 | 37101334 | IC PAL CHROMA(6163-6367) | 1 |
| IC1403 | 37151254 | IC TK15061Z | 1 |
| IC1103 | 37151267 | MOS MN1280R VOLTAGE DET | 1 |
| IC1601 | 37151329 | MOS BU2718S | 1 |
| IC1102 | 37151334 | IC BA6246 | 1 |
| IC1101 | 37151380 | MOS UPD75108CM-067 0700S3 | 1 |
| IC1602 | 37901150 | IC M5218 P (DIP) | 1 |
| IC1605 | 37903121 | MOS UPD4066BC(ESD) | 2 |
| IC1613 | 37904002 | MOS-UPD4011 | 1 |
| *** TRANSISTORS *** | | | |
| TR1611 | 35065416 | TP-2SD882 P | 1 |
| TR1203 | 35501931 | TR 2SC2785(E,F,H,J)AT | 16 |
| TR1235 | TR1211 | | |
| TR1255 | TR1246 | | |
| TR1407 | TR1402 | | |
| TR1411 | TR1409 | | |
| TR1610 | TR1601 | | |
| TR1105 | TR1206 | | |
| TR1212 | TR1221 | | |
| TR1243 | TR1245 | | |
| TR1252 | TR1254 | | |
| TR1415 | TR1419 | | |
| TR1108 | TR1603 | | |
| TR1607 | TR1609 | | |
| TR1614 | TR1615 | | |
| TR1240 | TR1241 | | |
| TR1416 | TR1403 | | |
| TR1101 | TR1242 | | |
| TR1208 | TR1213 | | |
| TR1253 | TR1418 | | |
| TR1619 | TR1623 | | |
| TR1617 | TR1618 | | |
| TR1602 | TR1621 | | |
| TR1102 | 35542518 | TR 2SD1227M R | 1 |

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|----------------------------|----------|---------------------------|-----|
| *** DIODES *** | | | |
| D1601 | D1603 | PIODE 1S2473 AT26 | 7 |
| D1101 | D1103 | DIODE 1SS133 | 26 |
| D1217 | D1223 | | |
| D1401 | D1402 | | |
| D1606 | D1607 | | |
| D1610 | D1611 | | |
| D1616 | D1618 | | |
| D1620 | D1621 | | |
| D1631 | D1632 | | |
| D1636 | D1637 | | |
| D1106 | D1107 | DIODE MA165 AT26 | 4 |
| D1109 | D1634 | DIODE 1SS133 | 3 |
| D1202 | D1634 | ZENER DIODE RD6.2EB2,AT26 | 1 |
| ZD1602 | | | |
| ZD1603 | 3690E196 | ZENER DIODE RD16EB2,AT26 | 1 |
| *** VARIABLE RESISTORS *** | | | |
| X1101 | 3900023 | 4.19MHZ RESONATOR | 1 |
| RM1101 | 39906127 | RPLOCK100K*4 1.8MM 1/16W | 1 |
| RM1102 | 39906128 | RPLOCK100K*5 1.8MM 1/16W | 1 |
| VR1201 | 41951144 | R-VARIABLE 2.2K*8 | 1 |
| VR1213 | 41951146 | R-VARIABLE 4.7K*8 | 1 |
| VR1205 | 41951147 | R-VARIABLE 6.8K*8 | 1 |
| VR1402 | 41951148 | R-VARIABLE 10K*8 | 1 |
| VR1204 | 41951150 | R-VARIABLE 22K*8 | 2 |
| VR1202 | 41951152 | R-VARIABLE 47K*8 | 2 |
| VP1401 | 41951249 | R-VARIABLE 2.2KB | 1 |
| VR1401 | 41951260 | R-VARIABLE 100KB | 2 |
| VR1603 | 41951262 | R-VARIABLE 330KB | 2 |
| *** COILS & FILTERS *** | | | |
| L1601 | L1604 | FILTER COIL 100UH AT (S) | 1 |
| L1205 | L1404 | FILTER COIL 2200UH | 2 |
| L1409 | L1619 | FILTER COIL 0405 15UH,AT | 1 |
| L1206 | L1207 | FILTER COIL 0405 18UH,AT | 2 |
| L1203 | L1219 | FILTER COIL 0405 47UH,AT | 4 |
| L1408 | L1401 | | |
| L1202 | L1204 | FILTER COIL 0405 100UH,AT | 10 |
| L1216 | L1217 | | |
| L1406 | L1407 | | |
| L1411 | L1410 | | |
| L1211 | L1210 | FILTER COIL 0405 120UH,AT | 1 |
| L1403 | L1402 | FILTER COIL 0405 220UH,AT | 1 |

MODEL : SYS/SER/VID PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--|---------------------------|-----|
| L1402 | 610G1835 | FILTER COIL 0405 330UH,AT | 1 |
| CF1401 | 61137009 | CERAMIC FILTER 4.16MHZ | 1 |
| DL1401 | 61551046 | DELAY (COMB FILTER) | 1 |
| DL1202 | 61551081 | 1HDLL(PAL-M01-CAN)LOW-H | 1 |
| FL1201 | 61827038 | 3.2MHZ L.P.F | 1 |
| FL1402 | 61827066 | PAL 2INIFILTER(5.06-1.4M) | 1 |
| FL1401 | 61827067 | 4.43MHZ BPF(3435) | 1 |
| T1401 | 61828014 | LC FILTER (8KHZ TRAP) | 1 |
| | *** PWB ASSYS | *** | |
| | R1674C01 | PWB SLOW-TIMING PMV-T384 | 1 |
| | R1674N01 | SUB SYSCON-6 ASSY | 1 |
| *** | FLECTRICAL PARTS & MISCELLANEOUS PARTS | *** | |
| X1401 | 64004143 | X*1AL 4.43MHZ (W/O-ADJ) | 1 |
| | *** APPEARANCE PARTS | *** | |
| | 162866431 | PWB HINGE | 1 |
| | 16286931 | BAND WHITE | 2 |
| | 16288261 | WIRERAP POST (STYLE PIN) | 3 |
| | 16288391 | PWB BRACKET(W7) | 1 |
| | 16582441 | HEAT SINK(2) | 1 |
| | 16631101 | SHEET | 1 |
| | 16875531 | SCREW M3*8*15BF | 1 |
| | *** RESISTORS | *** | |
| R1344 | 401KF643 | R-CARBON 56H 5X 1/6W | 1 |
| R1248 | 401KF651 | R-CARBON 12CH 5X 1/6W | 1 |
| R1245 | 401KF653 | R-CARBON 150H 5X 1/6W | 1 |
| R1114 | R1115 | R-CARBON 22GH 5X 1/6W | 5 |
| R1415 | R1673 | R-CARBON 27CH 5X 1/6W | 1 |
| R1246 | 401KE659 | R-CARBON 30H 5X 1/6W | 1 |
| R1421 | 401KE661 | R-CARBON 330H 5X 1/6W | 1 |
| R1249 | 401KE663 | R-CARBON 390H 5X 1/6W | 2 |
| R1413 | 401KE665 | R-CARBON 470H 5X 1/6W | 2 |
| R1236 | 401KE666 | R-CARBON 51CH 5X 1/6W | 1 |
| R1453 | 401KE667 | R-CARBON 56CH 5X 1/6W | 1 |
| R1136 | R1225 | R-CARBON 68CH 5X 1/6W | 5 |
| R1240 | R1633 | R-CARBON 750H 5X 1/6W | 1 |
| R1418 | 401KE670 | R-CARBON 820H 5X 1/6W | 3 |
| R1226 | R1725 | R-CARBON 1.0K 5X 1/6W | 20 |
| R1122 | R1130 | R-CARBON 1.0K 5X 1/6W | 20 |

MODEL : SYS/SER/VID PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|-----------------------|-----|
| R1213 | R1219 | R-CARBON 1.0K 5X 1/6W | 20 |
| R1310 | R1414 | R-CARBON 1.0K 5X 1/6W | 20 |
| R1417 | R1423 | R-CARBON 1.0K 5X 1/6W | 20 |
| R1426 | R143P | R-CARBON 1.0K 5X 1/6W | 20 |
| R1454 | R1429 | R-CARBON 1.0K 5X 1/6W | 20 |
| R1718 | R1753 | R-CARBON 1.0K 5X 1/6W | 20 |
| R1252 | R1258 | R-CARBON 1.2K 5X 1/6W | 5 |
| R1412 | R1419 | R-CARBON 1.2K 5X 1/6W | 5 |
| R1229 | R1241 | R-CARBON 1.5K 5X 1/6W | 6 |
| R1259 | R1313 | R-CARBON 1.5K 5X 1/6W | 6 |
| R1215 | R121P | R-CARBON 1.8K 5X 1/6W | 7 |
| R1293 | R1404 | R-CARBON 1.8K 5X 1/6W | 7 |
| R1719 | R121C | R-CARBON 2.2K 5X 1/6W | 12 |
| R1207 | R1314 | R-CARBON 2.2K 5X 1/6W | 12 |
| R1247 | R1345 | R-CARBON 2.2K 5X 1/6W | 12 |
| R1425 | R1441 | R-CARBON 2.2K 5X 1/6W | 12 |
| R1446 | R1446 | R-CARBON 2.2K 5X 1/6W | 12 |
| R1403 | R1424 | R-CARBON 2.2K 5X 1/6W | 12 |
| R1106 | R110P | R-CARBON 3.3K 5X 1/6W | 14 |
| R111C | R1111 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1113 | R1112 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1128 | R1127 | R-CARBON 3.3K 5X 1/6W | 14 |
| R161C | R1129 | R-CARBON 3.3K 5X 1/6W | 14 |
| R128C | R1449 | R-CARBON 3.3K 5X 1/6W | 14 |
| R143C | R1317 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1623 | R1623 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1623 | R1623 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1623 | R1623 | R-CARBON 3.3K 5X 1/6W | 14 |
| R125C | R1752 | R-CARBON 3.3K 5X 1/6W | 14 |
| R125C | R1767 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1432 | R1433 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1641 | R1677 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1455 | R1419 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1657 | R1660 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1426 | R1672 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1726 | R1726 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1123 | R1124 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1201 | R1216 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1256 | R129P | R-CARBON 3.3K 5X 1/6W | 14 |
| R1312 | R1315 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1342 | R1448 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1401 | R141C | R-CARBON 3.3K 5X 1/6W | 14 |
| R1221 | R1407 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1639 | R1640 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1644 | R1644 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1626 | R1631 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1715 | R1715 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1237 | R123P | R-CARBON 3.3K 5X 1/6W | 14 |
| R13C4 | R1445 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1754 | R1754 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1675 | R1676 | R-CARBON 3.3K 5X 1/6W | 14 |
| R13C0 | R1301 | R-CARBON 3.3K 5X 1/6W | 14 |
| P1678 | P1687 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1612 | R1664 | R-CARBON 3.3K 5X 1/6W | 14 |
| R1612 | R1664 | R-CARBON 3.3K 5X 1/6W | 14 |

MODEL : SYS/SEP/VID PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|-----------------------|-----|
| R1755 | 401WF713 | R-CARBON 47K 5X 1/6W | 4 |
| R1104 | R1668 | | 6 |
| R1692 | 401WF714 | R-CARBON 51K 5X 1/6W | |
| R1627 | R1674 | | 2 |
| R1604 | R1607 | R-CARBON 56K 5X 1/6W | 2 |
| R1603 | R1605 | R-CARBON 68K 5X 1/6W | 2 |
| R1105 | R1116 | R-CARBON 82K 5X 1/6W | 3 |
| R1121 | R1134 | R-CARBON 100K 5X 1/6W | 15 |
| R1609 | R1422 | | |
| R162F | R1634 | | |
| R1658 | R1717 | | |
| R1643 | P1667 | | |
| R1222 | 401WF725 | P-CARBON 150K 5X 1/6W | 3 |
| R1686 | 401WF727 | R-CARBON 180K 5X 1/6W | 2 |
| R1620 | 401WF728 | R-CARBON 200K 5X 1/6W | 1 |
| R1609 | 401WF732 | R-CARBON 300K 5X 1/6W | 1 |
| R1641 | 401WF734 | R-CARBON 360K 5X 1/6W | 1 |
| R1611 | 401WF735 | R-CARBON 390K 5X 1/6W | 2 |
| R1690 | 401WF737 | R-CARBON 470K 5X 1/6W | 1 |
| R1665 | 401WF739 | R-CARBON 510K 5X 1/6W | 1 |
| R1750 | 401WF739 | R-CARBON 560K 5X 1/6W | 1 |
| R1477 | 401WF745 | R-CARBON 1.0M 5X 1/6W | 2 |
| R1642 | | | |
| R1733 | 40105185 | R-CARBON 3.3K 5X 1/6W | 1 |
| R1372 | 40105487 | R-CARBON 3.9K 5X 1/6W | 1 |
| R1442 | 40105691 | R-CARBON 5.6K 5X 1/6W | 1 |
| R1455 | 40105709 | R-CARBON 33K 5X 1/6W | 1 |
| R1120 | 40105728 | R-CARBON 200K 5X 1/6W | 1 |
| R1103 | 20351109 | R-METAL 2.2H 5X 1W | 1 |
| R1602 | 40809801 | R-FUSE 1.0H 5X 1/2W | 1 |
| R1437 | 409HH641 | R-CARBON 47H 5X 1/4W | 1 |
| R1366 | 409HH649 | R-CARBON 100H 5X 1/4W | 1 |
| R1295 | 409HH657 | R-CARBON 220H 5X 1/4W | 1 |
| R1101 | 409HH665 | R-CARBON 470H 5X 1/4W | 1 |
| R1614 | 409HH670 | R-CARBON 750H 5X 1/4W | 1 |
| R1622 | 409HH671 | R-CARBON 820H 5X 1/4W | 1 |
| R1363 | 409HH673 | R-CARBON 1.0K 5X 1/4W | 1 |
| R1220 | 409HH675 | R-CARBON 1.2K 5X 1/4W | 1 |
| R1316 | 409HH681 | R-CARBON 2.2K 5X 1/4W | 1 |
| R1615 | 409HH685 | R-CARBON 3.3K 5X 1/4W | 1 |
| R1618 | 409HH689 | R-CARBON 4.7K 5X 1/4W | 1 |
| R1406 | 409HH693 | R-CARBON 6.8K 5X 1/4W | 1 |
| R1681 | 409HH697 | R-CARBON 10K 5X 1/4W | 2 |
| R1613 | 409HH699 | R-CARBON 12K 5X 1/4W | 1 |
| R1431 | 409HH705 | R-CARBON 22K 5X 1/4W | 1 |
| R1357 | 409HH717 | R-CARBON 68K 5X 1/4W | 1 |
| R1125 | 409HH721 | R-CARBON 100K 5X 1/4W | 1 |

MODEL : SYS/SEP/VID PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--------------------|-----------------------|-----|
| R1638 | 409HH725 | R-CARBON 150K 5X 1/4W | 1 |
| R1642 | 409HH734 | R-CARBON 360K 5X 1/4W | 1 |
| R1630 | 409HH751 | R-CARBON 1.2M 5X 1/4W | 1 |
| R1608 | 409HH761 | R-CARBON 4.7M 5X 1/4W | 2 |
| R1102 | 40912161 | R-CARBON 330H 5X 1/2W | 1 |
| R1669 | 409P2649 | R-CARBON 100H 5X 1/4W | 1 |
| | *** CAPACITORS *** | | |
| C1103 | 421A0933 | C-CERAMIC 50V 0.047UF | 1 |
| C1253 | 421CR015 | C-CERAMIC 50V 12 PF | 1 |
| C1291 | 421CR017 | C-CERAMIC 50V 15 PF | 2 |
| C1266 | 421CR019 | C-CERAMIC 50V 18 PF | 2 |
| C1210 | 421CR027 | C-CERAMIC 50V 39 PF | 2 |
| C1402 | 421CR031 | C-CERAMIC 50V 56 PF | 1 |
| C1206 | 421CR035 | C-CERAMIC 50V 82 PF | 2 |
| C1212 | 421CR037 | C-CERAMIC 50V 100PF | 2 |
| C1227 | 421CR038 | C-CERAMIC 50V 120PF | 2 |
| C1242 | 421CR039 | C-CERAMIC 50V 150PF | 1 |
| C1428 | 421CR041 | C-CERAMIC 50V 220PF | 1 |
| C1408 | 421CR042 | C-CERAMIC 50V 270PF | 1 |
| C1413 | 421CR044 | C-CERAMIC 50V 390PF | 1 |
| C1225 | 421CR045 | C-CERAMIC 50V 470PF | 2 |
| C1205 | 421CR047 | C-CERAMIC 50V 680PF | 2 |
| C1407 | 421CR049 | C-CERAMIC 50V 1000PF | 3 |
| C1406 | 421CR209 | C-CERAMIC 50V 4.7 PF | 1 |
| C1108 | 421CR237 | C-CERAMIC 50V 100PF | 1 |
| C1411 | 421CP239 | C-CERAMIC 50V 150PF | 1 |
| C1410 | 421CR240 | C-CERAMIC 50V 180PF | 1 |
| C1415 | 421CR241 | C-CERAMIC 50V 220PF | 1 |
| C1420 | 421CR245 | C-CERAMIC 50V 470PF | 1 |
| C1431 | 421CR453 | C-CERAMIC 16V 2200PF | 1 |
| C1648 | 421CR455 | C-CERAMIC 16V 3300PF | 1 |
| C1101 | 421CR461 | C-CERAMIC 16V 0.01UF | 28 |
| C1106 | | | |
| C1209 | C1211 | | |
| C1221 | C1232 | | |
| C1244 | C1250 | | |
| C1251 | C1252 | | |
| C1256 | C1257 | | |
| C1401 | C1409 | | |
| C1416 | C1423 | | |
| C1427 | C1429 | | |
| C1444 | C1443 | | |
| C1208 | C1240 | | |
| C1298 | C1294 | | |
| C1424 | C1435 | | |
| C1425 | | | |
| C1446 | | | |
| C1208 | C1275 | C-CERAMIC 25V 0.022UF | 10 |
| C1298 | C1299 | | |
| C1424 | C1437 | | |
| C1425 | | | |
| C1446 | 421CR205 | C-CERAMIC 50V 220PF | 1 |

MODEL : SYS/SFR/VID PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|----------|---------------------------|--------------------------|-----|
| C1107 | 421C0217 | C-CERAMIC 50V 2200PF | 1 |
| C1309 | 42132461 | C-CERAMIC 16V 0.01UF | 1 |
| C1654 | 42132903 | C-CERAMIC 25V 0.022UF | 1 |
| C1405 | 429C0333 | C-CERAMIC 25V 0.047UF | 2 |
| C1245 | 429C0337 | C-CERAMIC 25V 0.1UF | 1 |
| C1235 | 429G6547 | C092V1H561J-AT | 1 |
| C1603 | 429G6912 | C-FILM 50V 0.082UF | 2 |
| C1290 | 429G6913 | C-FILM 50V 0.1UF | 2 |
| C1632 | 429G6915 | C-METAL FILM 50V 0.15UF | 1 |
| C1753 | 429G6916 | C-METAL FILM 50V 0.18UF | 1 |
| C1751 | 429G6917 | C-METAL FILM 50V 0.22UF | 1 |
| C1625 | 429G6919 | C-METAL FILM 50V 0.33UF | 1 |
| C1650 | 429G8261 | C-METAL FILM 50V 6800PF | 1 |
| C1619 | 429G8263 | C-METAL FILM 50V 0.01UF | 1 |
| C1622 | 429G8269 | C-METAL FILM 50V 0.033UF | 3 |
| C1243 | 42976731 | C-FILM 50V 0.33 UF 5X | 1 |
| C1623 | 42976713 | C-METAL FILM 50V 0.1UF | 1 |
| C1651 | 42978161 | C-METAL FILM 50V 6800PF | 1 |
| C1621 | 42978168 | C-METAL FILM 50V 0.027UF | 1 |
| C1224 | 430A8101 | C-ELEC 6.3V 22UF | 2 |
| C1233 | 430A8103 | C-ELEC 6.3V 47UF | 15 |
| C1298 | C1287 | | |
| C1422 | C1304 | | |
| C1439 | C1434 | | |
| C1440 | C1406 | | |
| C1642 | C1647 | | |
| C1105 | C1207 | | |
| C1441 | C1605 | | |
| C1610 | C1611 | | |
| C1624 | | | |
| C1276 | | | |
| C1289 | | | |
| C1432 | | | |
| C1635 | | | |
| C1436 | | | |
| C1286 | | | |
| C1104 | | | |
| C1273 | | | |
| C1601 | | | |
| C1226 | | | |
| C1404 | | | |
| C1216 | | | |
| C1604 | | | |
| C1751 | | | |
| C1113 | | | |
| C1620 | | | |
| C1753 | | | |
| C1270 | | | |
| C1634 | | | |
| C1602 | | | |
| 429A8104 | C-ELEC 6.3V 100UF | | P |
| 430AP1C5 | C-ELEC 10V 22UF | | 1 |
| 430A8107 | C-ELEC 10V 47UF | | 1 |
| 430A8109 | C-ELEC 16V 100UF | | 8 |
| 430A8111 | C-ELEC 16V 33UF | | 1 |
| 430A8112 | C-ELEC 16V 47UF | | 1 |
| 430A8113 | C-ELEC 16V 100UF | | 1 |
| 430A8114 | C-ELEC 25V 4.7UF | | 1 |
| 430A8118 | C-ELEC 25V 47UF | | 2 |
| 430A8119 | C-ELEC 35V 3.3UF | | 1 |
| 430A8125 | C-ELEC 50V 0.22UF | | 1 |
| 430A8128 | C-ELEC 50V 1UF | | 7 |
| 430A8129 | C-ELEC 50V 2.2UF | | 3 |
| 430A8144 | C-ELEC 6.3V 220UF-AT | | 1 |
| 4301E128 | C-ELEC 50V 1UF | | 1 |
| 433A4104 | C-ELEC 50V 3.3UF-58SRA-AT | | 1 |
| 4393C021 | C-ELEC 50V 1UF | | 1 |
| 439P3304 | C-ELEC 6.3V 470UF | | 2 |

MODEL : NPMAL AUDIO PWB ASS

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|-------------------------|-----|
| I40C01 | ICS *** | | |
| | 37101311 | IC LA7098 (AUDIO) | 1 |
| | *** | TRANSISTORS *** | |
| TR4001 | 75055712 | IP 2SC2C01 I | 1 |
| | *** | VARIABLE RESISTORS *** | |
| | 41951245 | P-VARIABLE 2.2KP | 1 |
| VR4001 | 41951254 | R-VARIABLE 10KB | 1 |
| | *** | COILS & FILTERS *** | |
| L4001 | 410F2100 | FILTER COIL 822J-AT | 2 |
| L4002 | 410G1537 | FILTER COIL 4700H AT(S) | 1 |
| L4001 | 41911215 | OSC COIL | 1 |
| | *** | APPEARANCE PARTS *** | |
| A107 | 16445402 | SLIDE HINGE | 2 |
| | *** | RESISTORS *** | |
| R4022 | 401K1625 | R-CARBON 10H 5X 1/6W | 1 |
| R4021 | 401K1631 | R-CARBON 12H 5X 1/6W | 1 |
| R4016 | 401K1642 | P-CARBON 56H 5X 1/6W | 1 |
| R4005 | 401K1667 | R-CARBON 560H 5X 1/6W | 1 |
| R4007 | 401K1677 | R-CARBON 1.0K 5X 1/6W | 2 |
| R4012 | 401K1675 | R-CARBON 1.2K 5X 1/6W | 1 |
| R4014 | 401K1681 | R-CARBON 2.2K 5X 1/6W | 1 |
| R4002 | 401K1687 | R-CARBON 3.9K 5X 1/6W | 1 |
| R4015 | 401K1689 | R-CARBON 4.7K 5X 1/6W | 1 |
| R4013 | 401K1696 | R-CARBON 9.1K 5X 1/6W | 1 |
| R4003 | 401K1705 | R-CARBON 22K 5X 1/6W | 3 |
| R4004 | 401K1713 | R-CARBON 47K 5X 1/6W | 1 |
| R4004 | 401K1741 | R-CARBON 470K 5X 1/6W | 1 |
| R4011 | 401K1744 | R-CARBON 1.1K 5X 1/6W | 1 |
| R4008 | 401K1715 | R-CARBON 50K 5X 1/6W | 1 |
| R4023 | 40982101 | P-CARBON 1.0H 5X 1/4W | 1 |
| R4010 | 40982246 | R-CARBON 1.5M 5X 1/4W | 1 |

MODEL : NORMAL AUDIO PH- ASS

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--------------------|--------------------------|-----|
| | *** CAPACITORS *** | | |
| C4026 | 421CUC49 | C-CERAMIC 50V 1000PF | 1 |
| C4027 | 42331C52 | C-CERAMIC 50V 200PF | 1 |
| C4024 | 42968251 | C-METAL FILM 50V 1000PF | 1 |
| C4023 | 42968253 | C-METAL FILM 50V 1500PF | 1 |
| C4005 | 42968250 | C-METAL FILM 50V 4700PF | 2 |
| C4008 | 42968264 | C-METAL FILM 50V 0.012UF | 2 |
| C4015 | 42968268 | C-METAL FILM 50V 0.027UF | 1 |
| C4001 | 42968471 | C-FILM 50V 680PF 5% | 1 |
| C4025 | 42974161 | C-FILM 100V 0.033UF 5% | 1 |
| C4013 | 430AR109 | C-ELEC 16V 10UF | 1 |
| C4011 | 430AR110 | C-ELEC 16V 22UF | 2 |
| C4007 | 430AR112 | C-ELEC 16V 47UF | 1 |
| C4019 | 439A1583 | C-ELEC 10UF 16V | 1 |
| C4018 | 439A1602 | C-ELEC 1UF 50V | 1 |
| C4004 | | | |

MODEL : TIMER/FUNCTION PWE A

| SYMBOL | PARTS NO | DESCRIPTION | QTY | | |
|--------|--|---------------------------|----------|---------------------------|----|
| | *** ICs *** | | | | |
| IC2003 | 37101286 | IC M5278L56 | 1 | | |
| IC2001 | 37151363 | MOS UPD75216ACW-021 N9055 | 1 | | |
| | *** TRANSISTORS *** | | | | |
| TR2011 | 35501931 | TR 2SC2785(E,F,H,J)AT | 1 | | |
| TR2002 | 35502716 | TR BA1F4M | 3 | | |
| TR2001 | 355K2120 | DIGITAL TRANSISTOR | 1 | | |
| TR2005 | 35542716 | BA1F4M (C-22K) | 1 | | |
| | *** DIODES *** | | | | |
| D2005 | D2006 | D2011 | 360KA009 | DIODE 1S2473 AT26 | 3 |
| D2001 | D2002 | D2003 | 360KA025 | DIODE 1SS133 | 17 |
| D2004 | D2007 | D2008 | | | |
| D2009 | D2010 | D2012 | | | |
| D2013 | D2014 | D2015 | | | |
| D2016 | D2017 | D2022 | | | |
| D2028 | D2031 | | | | |
| D2031 | | | 360KC972 | DIODE MA165 AT26 | 1 |
| D2047 | | | 36001025 | DIODE 1SS133 | 1 |
| D2001 | | | 369KE180 | ZENER DIODE RD9-1EB3,AT26 | 1 |
| LD2002 | LD2003 | | 36904263 | LED RED SLR-34VC3 | 2 |
| | *** VARIABLE RESISTORS *** | | | | |
| X2001 | | | 39080023 | 4.19MHZ RESONATOR | 1 |
| | *** RELAYS & SWITCHES *** | | | | |
| SW2001 | SW2002 | SW2004 | 65330C52 | TACT SWITCH | 19 |
| SW2006 | SW2007 | SW2008 | | | |
| SW2009 | SW2010 | SW2012 | | | |
| SW2014 | SW2015 | SW2016 | | | |
| SW2017 | SW2018 | SW2020 | | | |
| SW2021 | SW2022 | SW2026 | | | |
| SW2037 | | | | | |
| | *** ELECTRICAL PARTS & MISCELLANEOUS PARTS *** | | | | |
| X2002 | | | 64004151 | X-TAL 32-768KHZ | 1 |
| FD2001 | | | 67930062 | FIP9TM7 (VPS) | 1 |

MODEL : TIMER/FUNCTION PUB A

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------------|----------|-----------------------------------|-----|
| *** APPEARANCE PARTS *** | | | |
| R2037 | R2038 | 16288281 WIRERAF POST (STYLE PIN) | 1 |
| R2040 | R2041 | 16445962 HOLDER | 1 |
| R2043 | R2042 | 16448712 LED HOLDER (3KEY) | 1 |
| *** RESISTORS *** | | | |
| R2025 | R2039 | 401KE657 R-CARBON 220H 5X 1/6W | 7 |
| R2001 | R2026 | 401KE661 R-CARBON 330H 5X 1/6W | 2 |
| R2013 | R2025 | 401KE665 R-CARBON 470H 5X 1/6W | 1 |
| R2004 | R2010 | 401KE673 R-CARBON 1.0K 5X 1/6W | 1 |
| R2011 | R2012 | 401KE697 R-CARBON 10K 5X 1/6W | 8 |
| R2029 | R2027 | | |
| R2005 | R2030 | 401KE717 R-CARBON 68K 5X 1/6W | 1 |
| R2014 | R2030 | 401KE721 R-CARBON 100K 5X 1/6W | 4 |
| R2034 | R2033 | 401KE729 R-CARBON 220K 5X 1/6W | 2 |
| R2024 | R2033 | 401KE733 R-CARBON 330K 5X 1/6W | 1 |
| R2002 | R2033 | 401KE741 R-CARBON 680K 5X 1/6W | 1 |
| R2003 | | | |
| R2049 | | 40105649 R-CARBON 100H 5X 1/6W | 1 |
| R2006 | | 409HB685 R-CARBON 3.3K 5X 1/4W | 1 |
| R2015 | | 409HB697 R-CARBON 10K 5X 1/4W | 1 |
| R2008 | | 409HB721 R-CARBON 100K 5X 1/4W | 1 |
| *** CAPACITORS *** | | | |
| C2016 | C2025 | 421CB037 C-CERAMIC 50V 100PF | 7 |
| C2026 | C2028 | | |
| C2029 | | | |
| C2011 | C2009 | 421CB049 C-CERAMIC 50V 1000PF | 1 |
| C2010 | C2009 | 421CB237 C-CERAMIC 50V 100PF | 4 |
| C2003 | C2023 | 421CB461 C-CERAMIC 16V 0.01UF | 2 |
| C2006 | C2015 | 421CB863 C-CERAMIC 25V 0.022UF | 3 |
| C2012 | C2013 | 423A2C37 C-CERAMIC 50V 47PF | 2 |
| C2001 | C2005 | 430A8109 C-ELEC 16V 10UF | 3 |
| C2002 | | 430A8124 C-ELEC 50V 0.1UF | 1 |
| C2021 | | 430A8131 C-ELEC 50V 4.7UF | 1 |
| C2004 | | 430A8351 C-ELEC 50V 3.3UF | 1 |

MODEL : SUB FUNCTION PWE ASS

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|----------------------------|----------|----------------------------|-----|
| *** DIODES *** | | | |
| D203C | D2032 | 360KAC25 DIODE 1SS133 | 6 |
| D2034 | D2036 | 360KC972 DIODE MA165 AT26 | 1 |
| D2045 | | 36904262 LED GRN SLR-34MC3 | 1 |
| L02C01 | | | |
| *** VARIABLE RESISTORS *** | | | |
| VR2C01 | 41504194 | VR RK931 50CKB (L=20) | 1 |
| VR2C02 | 41504202 | VR 20KB RK931 (L=20) | 1 |
| *** RELAYS & SWITCHES *** | | | |
| SW2C38 | SW2039 | 65180052 SLIDE SW 1-1-2 | 4 |
| SW2042 | | | |
| SW2040 | 65180060 | SW SLIDE | 1 |
| SW2011 | SW2013 | 65330052 TACT SWITCH | 6 |
| SW2C23 | SW2028 | SW2031 | |
| *** APPEARANCE PARTS *** | | | |
| | 16447151 | LED HOLDER 8 | 1 |
| *** RESISTORS *** | | | |
| R2036 | 401KE661 | R-CARBON 330H 5X 1/6W | 1 |
| *** CAPACITORS *** | | | |
| C2020 | 43920001 | C-ELEC DOUBLE LAYER | 1 |

MODEL : TUNFR/IF P/N ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------------------------|----------------------------|-----|
| | *** CRT & TUNER *** | | |
| | 34303021 | U/V TUNER(CATV) | 1 |
| | *** ICS *** | | |
| IC31C4 | 37101127 | IC UPC-393C | 1 |
| IC30C1 | 37101240 | IC LA7530 | 1 |
| IC31C3 | 37101284 | IC LA721C | 1 |
| IC31C2 | 37151324 | MOS M5865SP (EARM) | 1 |
| IC31C1 | 37903162 | IC LA791C (XU260C) | 1 |
| | *** TRANSISTORS *** | | |
| TP31P8 | 35004111 | TR-2SA916, M | 1 |
| TP31C4 | 35055312 | TR 2SC201 L | 1 |
| TP31C5 | 35058012 | TR 2SC2352 L | 1 |
| TP31C3 | 3551P331 | TR 2SC27851E, F, H, J, JAT | 3 |
| TP30C1 | 35541131 | TR-2SA1175 (E, F, H, J) | 4 |
| TP31C2 | | | |
| TP30C4 | 35940502 | TR-2SC1730 L | 1 |
| | *** DIODES *** | | |
| D31C1 | 360KAC6 | DIODE-1SS133 | 1 |
| D31C4 | | | |
| D31C5 | | | |
| D31C1 | 37003040 | ZENER DIODE UPC-574J | 1 |
| | *** VARIABLE RESISTORS *** | | |
| X31C1 | 360R0012 | CERAMIC RESC. CSPAC0ES | 1 |
| VR31C1 | 4105114P | R-VARIABLE 10K Ω P | 1 |
| | *** COILS & FILTERS *** | | |
| L31C1 | 41062745 | COIL FILTER | 1 |
| L31C4 | 41062772 | COIL FILTER | 1 |
| L30C5 | 41011531 | SAM COIL 1RP | 1 |
| L31C2 | 41011525 | SAM COIL 2RP | 1 |
| FL31C2 | 41102734 | CERAMIC DISCRIMINATOR | 1 |
| FL31C1 | 41105012 | SIF FILTER 5.5MHZ | 1 |
| FL31C4 | 41137037 | CERAMIC TRAP TPSS-5MW | 1 |
| FL31C1 | 41139023 | VIF SAWF SAE38-9MHz72Z | 1 |
| TR001 | 41F15155 | V-IFT (9.5TURN) | 2 |

MODFL : TUNER/IF P&H ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--|----------|-------------------------|-----|
| *** ELECTRICAL PARTS & MISCELLANEOUS PARTS *** | | | |
| | 7070009 | CABLE CONNECTOR (110MM) | 1 |
| *** APPEARANCE PARTS *** | | | |
| | 165P2402 | TUNER SHIELD CASE | 1 |
| *** RESISTORS *** | | | |
| R3027 | 401KF625 | R,CARBON 10H 5% 1/6W | 1 |
| R3035 | 401KF641 | R,CARBON 47H 5% 1/6W | 1 |
| R3025 | 401KF645 | R,CARBON 68H 5% 1/6W | 1 |
| R3026 | 401KF649 | R,CARBON 100H 5% 1/6W | 1 |
| R3023 | 401KF653 | R,CARBON 150H 5% 1/6W | 1 |
| R3032 | 401KF657 | R,CARBON 220H 5% 1/6W | 1 |
| R3003 | 401KF659 | R,CARBON 270H 5% 1/6W | 1 |
| R3009 | 401KF661 | R,CARBON 33CH 5% 1/6W | 1 |
| R3024 | 401KF663 | R,CARBON 390H 5% 1/6W | 1 |
| R3004 | 401KF665 | R,CARBON 47CH 5% 1/6W | 2 |
| R3018 | 401KF669 | R,CARBON 680H 5% 1/6W | 2 |
| R3007 | 401KF673 | R,CARBON 1.0K 5% 1/6W | 7 |
| R3019 | | | |
| R3143 | | | |
| R3010 | R3101 | R,CARBON 1.2K 5% 1/6W | 1 |
| R3103 | R3102 | R,CARBON 2.2K 5% 1/6W | 7 |
| R3122 | R3120 | | |
| R3110 | | | |
| R3124 | 401KF685 | R,CARBON 3.3K 5% 1/6W | 1 |
| R3002 | 401KF687 | R,CARBON 3.9K 5% 1/6W | 1 |
| R3125 | 401KF689 | R,CARBON 4.7K 5% 1/6W | 5 |
| R3005 | | | |
| R3021 | 401KF691 | R,CARBON 5.6K 5% 1/6W | 1 |
| R3111 | 401KF693 | R,CARBON 6.8K 5% 1/6W | 1 |
| | 401KF697 | R,CARBON 10K 5% 1/6W | 2 |
| R3022 | 401KF699 | R,CARBON 12K 5% 1/6W | 1 |
| R3114 | 401KF701 | R,CARBON 15K 5% 1/6W | 1 |
| R3116 | 401KF703 | R,CARBON 18K 5% 1/6W | 4 |
| R3113 | 401KF705 | R,CARBON 22K 5% 1/6W | 5 |
| R3108 | 401KF707 | R,CARBON 27K 5% 1/6W | 1 |
| R3013 | 401KF717 | R,CARBON 47K 5% 1/6W | 1 |
| R3145 | | | |
| R3147 | 401KF717 | R,CARBON 68K 5% 1/6W | 1 |
| R3006 | 401KF721 | R,CARBON 100K 5% 1/6W | 3 |
| R3107 | 401KF729 | R,CARBON 220K 5% 1/6W | 2 |

MODEL : TUNER/IF PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--------------------|--------------------------|-----|
| R3144 | 401KE733 | R-CARBON 33K 5% 1/6W | 1 |
| R3104 | 401KE737 | R-CARBON 470K 5% 1/6W | 2 |
| R3119 | 401KE741 | R-CARBON 48K 5% 1/6W | 1 |
| R3118 | 401KE745 | R-CARBON 1.0K 5% 1/6W | 1 |
| R3133 | 40809989 | R-FUSE 2.2H 5% 1/4W | 1 |
| R3152 | 409HB641 | R-CARBON 47H 5% 1/4W | 1 |
| R3137 | 409HB721 | R-CARBON 100K 5% 1/4W | 2 |
| R3027 | R314P | R-CARBON 2.2H 5% 1/4W | 3 |
| R3151 | 40913125 | R-CARBON 10H 5% 1/4W | 1 |
| | *** CAPACITORS *** | | |
| C311C | 421CB43 | C-CERAMIC 50V 330PF | 1 |
| C3109 | C3118 | C-CERAMIC 50V 1000PF | 1 |
| C3007 | C3010 | C-CERAMIC 16V 0.01UF | 12 |
| C3014 | C3015 | C3020 | |
| C3031 | C3032 | C3033 | |
| C3034 | C3101 | C3116 | |
| C3061 | C3002 | | |
| C3120 | | | |
| C3004 | 423A2C15 | C-CERAMIC 50V 10PF | 1 |
| C3018 | 423A2025 | C-CERAMIC 50V 15PF | 1 |
| C3025 | 423A6C03 | C-CERAMIC 50V 3PF | 1 |
| C3011 | 423A6C40 | C-CERAMIC 50V 62PF | 2 |
| C3005 | 42968267 | C-METAL FILM 50V 0.022UF | 1 |
| C3008 | 430A8109 | C-ELEC 16V 10UF | 1 |
| C3019 | 430A8110 | C-ELEC 16V 22UF | 1 |
| C3016 | 430A8112 | C-ELEC 16V 47UF | 4 |
| C3115 | | | |
| C3111 | 430A8127 | C-ELEC 50V 0.47UF | 2 |
| C3003 | 430A8128 | C-ELEC 50V 1UF | 2 |
| C3006 | 430A8130 | C-ELEC 50V 3.3UF | 1 |
| C3106 | 430B6068 | C-ELEC 50V 47UF | 1 |
| C3117 | 43018103 | C-ELEC 6.3V 47UF | 1 |
| C3103 | 439H0049 | C-ELEC 50V 0.22UF | 3 |

MODEL : FPE AMP. PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--------------------------|---------------------------|-----|
| IC5C1 | *** ICS *** | | |
| | 37151238 | IC ANA322N (HEAD AMP) | 1 |
| | *** TRANSISTORS *** | | |
| TR5C1 | TP502 | 1W 2SC2765(E,F,H,J)AT | 5 |
| TP5C6 | TR507 | | |
| TP502 | 35543200 | TR-2SC218F | 1 |
| TR5C4 | 35562244 | TR-2SD639 R,S | 1 |
| | *** COILS & FILTERS *** | | |
| L50P | 610G1545 | FILTER COIL 2200UH | 1 |
| L504 | 610G1P1P | FILTER COIL 0405 12UH,AT | 1 |
| L501 | 610G1P19 | FILTER COIL 0405 15UH,AT | 1 |
| L504 | 610G1P21 | FILTER COIL 0405 22UH,AT | 1 |
| L505 | 610G1P25 | FILTER COIL 0405 47UH,AT | 1 |
| L51C | 610G1824 | FILTER COIL 0405 56UH,AT | 1 |
| L502 | 610G1P26 | FILTER COIL 0405 100UH,AT | 2 |
| | *** APPEARANCE PARTS *** | | |
| | 165P2291 | SHIELD CASE COVER A | 1 |
| | 165P2301 | SHIELD CASE COVER B | 1 |
| | 16582311 | SHIELD CASE FRAME | 1 |
| | *** RESISTORS *** | | |
| R509 | 401KE625 | R-CARBON 10K 5% 1/6W | 2 |
| R50P | 401KE633 | R-CARBON 22H 5% 1/6W | 1 |
| R506 | 401KE643 | R-CARBON 56H 5% 1/6W | 1 |
| R504 | 401KE649 | R-CARBON 100H 5% 1/6W | 1 |
| R505 | 401KE657 | R-CARBON 22H 5% 1/6W | 2 |
| R515 | 401KE659 | R-CARBON 270H 5% 1/6W | 1 |
| R507 | 401KE661 | R-CARBON 330H 5% 1/6W | 3 |
| R503 | 401KE669 | R-CARBON 680H 5% 1/6W | 2 |
| R517 | 401KE671 | R-CARBON 820H 5% 1/6W | 1 |
| R514 | 401KE673 | R-CARBON 1.0K 5% 1/6W | 4 |
| R522 | | | |
| R513 | 401KE677 | R-CARBON 1.5K 5% 1/6W | 3 |
| R502 | 401KE679 | R-CARBON 1.8K 5% 1/6W | 1 |
| R510 | 401KE685 | R-CARBON 2.2K 5% 1/6W | 1 |
| R501 | 401KE693 | R-CARBON 2.8K 5% 1/6W | 1 |
| R512 | 401KE697 | R-CARBON 10K 5% 1/6W | 3 |

MODEL : FIF AMP PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------|----------|-----------------------|-----|
| *** CAPACITORS *** | | | |
| C501 | 421CP017 | C-CERAMIC 50V 15 PF | 1 |
| C516 | 421CP025 | C-CERAMIC 50V 33 PF | 1 |
| C51P | 421CP035 | C-CERAMIC 50V 82 PF | 1 |
| C525 | 421CE046 | C-CERAMIC 50V 560PF | 1 |
| C517 | 421CP451 | C-CERAMIC 14V 1500PF | 1 |
| C506 | 421CP457 | C-CERAMIC 14V 4700PF | 1 |
| C50P | C515 | C-CERAMIC 14V 0.010UF | 3 |
| C504 | C515 | C-CERAMIC 25V 0.022UF | 4 |
| C524 | | | |
| C507 | C510 | C-CERAMIC 50V 0.022UF | 2 |
| C502 | 429C0337 | C-CERAMIC 25V 0.1UF | 1 |
| C505 | 42930337 | C-CERAMIC 25V 0.1UF | 1 |
| C512 | 430AP107 | C-ELEC 10V 47UF | 2 |
| C521 | 430AP109 | C-ELEC 10V 10UF | 1 |
| C507 | 430AP112 | C-ELEC 10V 47UF | 1 |
| C511 | 430AP125 | C-ELEC 50V 0.22UF | 1 |

MODEL : CN SCREEN PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------------|----------|---------------------------|-----|
| *** ICS *** | | | |
| ICAC01 | 37151375 | MOS M5C455-C535P (US CSD) | 1 |
| *** TRANSISTORS *** | | | |
| TP6001 | TR6C06 | TR 2SC2765(E,F,H,J)AT | 3 |
| TR6002 | TR6C04 | TR 2SA1175 (E,F,H,J) | 3 |
| *** DIODES *** | | | |
| D6001 | 360KA025 | DIODE, 1SS133 | 1 |
| *** COILS & FILTERS *** | | | |
| L6002 | 610G1822 | FILTER COIL C405 270UH,AT | 1 |
| L6001 | 610G1820 | FILTER COIL C405 100UH,AT | 2 |
| *** APPEARANCE PARTS *** | | | |
| | 165R3101 | SCREEN PWR PRACKET | 1 |
| | 16875531 | SCREW #3*8*15RF | 2 |
| *** RESISTORS *** | | | |
| R6029 | 401KE625 | R-CARBON 10H 5% 1/6W | 1 |
| R6016 | 401KE645 | R-CARBON 68H 5% 1/6W | 1 |
| R6017 | 401KE640 | R-CARBON 100H 5% 1/6W | 1 |
| R6004 | 401KE657 | R-CARBON 220H 5% 1/6W | 1 |
| R6003 | 401KE671 | R-CARBON 820H 5% 1/6W | 1 |
| R6015 | 401KE673 | R-CARBON 1.0K 5% 1/6W | 1 |
| R6011 | 401KE681 | R-CARBON 2.2K 5% 1/6W | 2 |
| R6013 | 401KE685 | R-CARBON 3.3K 5% 1/6W | 1 |
| R6010 | 401KE680 | R-CARBON 4.7K 5% 1/6W | 2 |
| R6001 | 401KE693 | R-CARBON 6.8K 5% 1/6W | 2 |
| R6020 | 401KE697 | R-CARBON 10V 5% 1/6W | 3 |
| R6002 | 401KE701 | R-CARBON 15K 5% 1/6W | 2 |
| R6014 | 401KE705 | R-CARBON 22K 5% 1/6W | 5 |
| R6027 | 401KE712 | R-CARBON 43K 5% 1/6W | 1 |
| R6006 | 401KE713 | R-CARBON 47K 5% 1/6W | 1 |
| P6025 | 401KE715 | R-CARBON 56K 5% 1/6W | 1 |
| R6008 | 401KE721 | R-CARBON 100K 5% 1/6W | 1 |
| P6009 | 401KE733 | R-CARBON 330K 5% 1/6W | 1 |
| R6012 | 401KE737 | R-CARBON 470K 5% 1/6W | 1 |

MODEL : ON SCREEN PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------|----------|--------------------------------|-----|
| *** CAPACITORS *** | | | |
| C6004 | C6C05 | 421C012 C-CERAMIC 50V 10 PF | 2 |
| C6010 | C6014 | 421C037 C-CERAMIC 50V 100PF | 2 |
| C6016 | C6017 | 421C0454 C-CERAMIC 16V 2700PF | 2 |
| C6007 | C6012 | 421C0263 C-CERAMIC 25V 0.022UF | 2 |
| C6003 | C6012 | 421A104 C-CERAMIC 50V 22PF | 1 |
| C6001 | C6C02 | C6C02 C-CERAMIC 6.3V 470UF | 4 |
| C6013 | C6009 | 430A8105 C-ELEC 10V 22UF | 1 |
| C6011 | C6015 | 430A8127 C-ELEC 50V 0.47UF | 1 |
| C6006 | C6015 | 430A812P C-ELEC 50V 10F | 2 |

MODEL : DIGITAL PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|----------------------------|----------|----------------------------------|-----|
| *** ICs *** | | | |
| IC5012 | IC5013 | 37101159 LA7016 ANALOG SW | 2 |
| IC5015 | 37101274 | IC BA236 | 1 |
| IC5004 | IC5005 | 37101318 IC MN 3106 | 2 |
| IC5002 | 37101332 | IC HA19216 | 1 |
| IC5003 | 37101333 | IC HA19508 | 1 |
| IC5014 | 37151167 | MOS HD140408 | 1 |
| IC5006 | IC5007 | 37151315 MOS UPD41464CF-12 | 6 |
| IC5009 | IC5010 | IC5011 | |
| IC5001 | 37151355 | MOS UPD65031G-153-12 | 1 |
| *** TRANSISTORS *** | | | |
| TR5002 | TR5003 | 35501531 TR 2SC2785(E,F,H,J)AT | 15 |
| TR5006 | TR5007 | TR5010 | |
| TR5013 | TR5016 | TR5018 | |
| TR5019 | TR5022 | TR5025 | |
| TR5033 | TR5037 | TR5039 | |
| TR5040 | | 35502710 TR,OTC124ES,AT | 1 |
| TR5015 | TR5026 | 35502716 TR,BA1F4M | 4 |
| TR5036 | | | |
| TR5038 | | 35502717 TR,BA1L4M | 1 |
| TR5001 | TR5009 | 355K1131 TR,2SA1175 (E,F,H,J) | 9 |
| TR5014 | TR5017 | TR5023 | |
| TR5030 | TR5031 | TR5034 | |
| TR5032 | | 355K2110 BN1F4M (A,22K) AT | 1 |
| TR5021 | | 355K2111 BN1L4M (A,47K) AT | 1 |
| TR5041 | TR5042 | 35541931 TR,2SC2785(E,F,H,J) | 1 |
| | | 35542710 DTC 124ES | 2 |
| *** DIODES *** | | | |
| D5001 | D5002 | D5003 | |
| D5004 | D5005 | D5008 | |
| D5010 | D5011 | D5012 | |
| D5013 | D5015 | D5016 | |
| D5017 | D5021 | D5022 | |
| D5024 | D5025 | D5026 | |
| D5023 | D5027 | | |
| ZD5001 | | 36001025 DIODE 1SS133 | 2 |
| ZD5002 | | 36905040 ZENER,DIODE RD-5.1EB2-H | 1 |
| | | 36905141 ZENER DIODE RD2.0EB(A) | 1 |
| *** VARIABLE RESISTORS *** | | | |
| VR5003 | | 41951245 R-VARIABLE 47CB | 1 |
| VR5001 | VR5002 | 41951254 R-VARIABLE 10KB | 2 |
| VR5004 | VR5005 | 41951260 R-VARIABLE 100KB | 2 |

MODEL : DIGITAL PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------------|----------|--------------------------|-----|
| *** COILS & FILTERS *** | | | |
| L5011 | 610G1511 | FILTER COIL 3.3UH AT (S) | 1 |
| L5008 | 610G1522 | FILTER COIL 27UH AT (S) | 1 |
| L5001 | 610G1623 | FILTER COIL 33UH AT (S) | 8 |
| L5004 | L5003 | | |
| L5013 | L5007 | | |
| L5010 | L5014 | | |
| L5015 | 610G1624 | FILTER COIL 39UH AT (S) | 1 |
| | 61071618 | COIL/FILTER 12UH(S) | 1 |
| FL5003 | 61827C39 | 4.43MHZ B.P.F | 1 |
| FL5002 | 61827C65 | 5.0MHZ L.P.F | 1 |
| FL5001 | 61911196 | LFF ZLB-SM1845 | 1 |
| *** APPEARANCE PARTS *** | | | |
| | 16286431 | PWB HINGE | 2 |
| | 16448542 | LOCK HANGER | 1 |
| | 16582911 | DIGITAL PARTS SHIELD | 1 |
| | 16582951 | DIGITAL PATARN SHIELD | 1 |
| | 16631251 | SHEET | 1 |
| *** RESISTORS *** | | | |
| R5074 | 401KE653 | R-CARBON 150H 5X 1/6W | 1 |
| R5012 | 401KE661 | R-CARBON 330H 5X 1/6W | 3 |
| R5064 | 401KE665 | R-CARBON 470H 5X 1/6W | 1 |
| R5020 | 401KE666 | R-CARBON 510H 5X 1/6W | 1 |
| R5065 | 401KE667 | R-CARBON 560H 5X 1/6W | 1 |
| R5062 | 401KE669 | R-CARBON 680H 5X 1/6W | 1 |
| R5002 | 401KE673 | R-CARBON 1.0K 5X 1/6W | 15 |
| R5026 | R5045 | | |
| R5030 | R5029 | | |
| R5035 | R5051 | | |
| R5063 | R5061 | | |
| R5024 | R5076 | | |
| R5048 | R5107 | | |
| R5010 | R5011 | | |
| R5022 | R5128 | | |
| R5007 | R5025 | | |
| R5004 | R5006 | | |
| R5084 | R5132 | | |
| R5094 | R5092 | | |
| R5066 | R5101 | | |
| R5103 | 401KE684 | R-CARBON 3.3K 5X 1/6W | 4 |
| | 401KE685 | R-CARBON 3.9K 5X 1/6W | 6 |
| R5005 | 401KE687 | R-CARBON 3.9K 5X 1/6W | 1 |
| R5015 | R5043 | | |
| R5073 | R5083 | | |
| | R5117 | | |
| | 401KE689 | R-CARBON 4.7K 5X 1/6W | 12 |

MODEL : DIGITAL PWR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--------------------|-------------------------|-----|
| R5113 | R5114 | | |
| R5116 | R5117 | | |
| R5122 | R5123 | | |
| R5035 | R5126 | | |
| R5070 | 401KE689 | R-CARBON 4.7K 5X 1/6W | 12 |
| | 401KE693 | R-CARBON 6.8K 5X 1/6W | 1 |
| | 401KE695 | R-CARBON 8.2K 5X 1/6W | 1 |
| R5015 | 401KE697 | R-CARBON 10K 5X 1/6W | 4 |
| R5137 | 401KE699 | R-CARBON 12K 5X 1/6W | 2 |
| R5028 | 401KE701 | R-CARBON 15K 5X 1/6W | 2 |
| R5065 | 401KE703 | R-CARBON 18K 5X 1/6W | 1 |
| R5096 | 401KE713 | R-CARBON 47K 5X 1/6W | 2 |
| R5106 | 401KE721 | R-CARBON 100K 5X 1/6W | 3 |
| R5050 | 401KE725 | R-CARBON 150K 5X 1/6W | 1 |
| R5086 | 401KE735 | R-CARBON 390K 5X 1/6W | 1 |
| R5088 | 401KE741 | R-CARBON 680K 5X 1/6W | 1 |
| R5125 | 401KE745 | R-CARBON 1.0M 5X 1/6W | 3 |
| R5109 | 40105235 | R-CARBON 390K 5X 1/6W | 1 |
| R5124 | 40105657 | R-CARBON 220H 5X 1/6W | 1 |
| R5134 | 40105660 | R-CARBON 300H 5X 1/6W | 1 |
| R5127 | 40105695 | R-CARBON 8.2K 5X 1/6W | 1 |
| R5139 | 40105697 | R-CARBON 10K 5X 1/6W | 1 |
| R5136 | 40105704 | R-CARBON 20K 5X 1/6W | 1 |
| R5138 | 40105727 | R-CARBON 180K 5X 1/6W | 1 |
| R5095 | *** CAPACITORS *** | | |
| C5064 | 421C8027 | C-CERAMIC 50V 39 PF | 1 |
| C5020 | 421C8029 | C-CERAMIC 50V 47 PF | 1 |
| C5041 | 421C8043 | C-CERAMIC 50V 330PF | 1 |
| C5066 | 421C8045 | C-CERAMIC 50V 470PF | 1 |
| C5072 | 421C8454 | C-CERAMIC 16V 2700PF | 1 |
| C5017 | 421C8457 | C-CERAMIC 16V 4700PF | 1 |
| C5004 | 421C8863 | C-CERAMIC 25V 0.022UF | 18 |
| C5011 | C5009 | | |
| C5012 | C5015 | | |
| C5019 | C5034 | | |
| C5040 | C5036 | | |
| C5048 | C5049 | | |
| C5050 | C5057 | | |
| C5065 | C5062 | | |
| C5086 | C5081 | | |
| C5084 | 42132023 | C-CERAMIC 50V 27 PF | 1 |
| C5082 | 42132043 | C-CERAMIC 50V 330PF | 1 |
| | 42132863 | C-CERAMIC 25V 0.022UF | 1 |
| C5051 | 42181377 | C-CERAMIC 25V 0.022UF | 7 |
| C5054 | C5053 | | |
| C5073 | C5055 | | |
| C5016 | 42966908 | C FILM 50V 0.039UF | 1 |
| C5077 | 42966912 | C FILM 50V 0.082UF | 1 |
| C5042 | 42966921 | C-METAL FILM 50V 0.47UF | 1 |
| C5076 | 42968258 | C-METAL FILM 50V 3900PF | 1 |

MODEL : DIGITAL PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|--------------------------|-----|
| C5085 | 42968261 | C,METAL FILM 50V 6800PF | 1 |
| C5086 | 42968268 | C,METAL FILM 50V 0.027UF | 1 |
| C5021 | 42968269 | C,METAL FILM 50V 0.033UF | 1 |
| C5059 | 42910644 | C,CERAMIC 50V 0.1UF | 1 |
| C5092 | 42978169 | C,METAL FILM 50V 0.033UF | 1 |
| C5023 | 42978269 | C,METAL FILM 50V 0.033UF | 1 |
| C5088 | 430A8101 | C,ELEC 6.3V 22UF | 1 |
| C5007 | 430A8104 | C,ELEC 6.3V 100UF | 7 |
| C5047 | C5035 | | |
| C5080 | C5078 | | |
| C507C | | | |
| C5022 | C5029 | C,ELEC 16V 10UF | 1 |
| C5031 | C5046 | C,ELEC 16V 22UF | 7 |
| C5061 | | | |
| C5005 | C5068 | | |
| C5075 | 430A8113 | C,ELEC 16V 100UF | 3 |
| C5028 | 430A8128 | C,ELEC 50V 1UF | 1 |
| C5087 | 430A8131 | C,ELEC 50V 4.7UF | 1 |
| C5013 | 43018103 | C,ELEC 6.3V 47UF | 1 |
| | 43018104 | C,ELEC 6.3V 100UF | 2 |
| C5090 | 43018105 | C,ELEC 10V 22UF | 1 |
| C5067 | 43018110 | C,ELEC 16V 22UF | 1 |
| C5006 | 43018112 | C,ELEC 16V 47UF | 1 |
| C5038 | 43018113 | C,ELEC 16V 100UF | 1 |
| C5002 | 43311010 | C,ELEC 16V 10UF | 1 |

MODEL : VFS DECODED PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|--|-------------|-----|
| ICP71 | *** ICS *** | | |
| ICP72 | 37101309 IC SAF5235 | | 1 |
| | 37101310 IC SAF1135 | | 1 |
| D871 | *** DIODES *** | | |
| | 360KA025 DIODE,1SS133 | | 1 |
| L871 | *** COILS & FILTERS *** | | |
| | 610A7C17 COIL,FILTER 1CUH | | 1 |
| X871 | *** ELECTRICAL PARTS & MISCELLANEOUS PARTS *** | | |
| | 6400A146 X,TAL HC-49U 10.000MHZ | | 1 |
| R872 | *** RESISTORS *** | | |
| R871 | 401KE697 R,CAREON 10K 5% 1/6W | | 2 |
| | 401KE721 R,CAREON 100K 5% 1/6W | | 1 |
| CE72 | *** CAPACITORS *** | | |
| CE75 | 421AC224 C,CERAMIC 50V 0.022UF | | 1 |
| CE81 | 421CC217 C,CERAMIC 50V 1000PF | | 1 |
| CE73 | 423A1142 C,CERAMIC 50V 82PF | | 1 |
| CE79 | 423A1145 C,CERAMIC 50V 100PF | | 1 |
| CE76 | 423A1155 C,CERAMIC 50V 270PF | | 1 |
| CE74 | 423A1101 C,CERAMIC 50V 470PF | | 1 |
| CE80 | 423A2C25 C,CERAMIC 50V 15PF | | 1 |
| CE77 | 429A650C C,FILM 50V 4700PF 5% | | 1 |
| CE82 | 429A0F54 C,METAL FILM 25V C,C62UF | | 1 |
| CE83 | 429A0F64 C,METAL FILM 25V C,C47UF | | 1 |
| CE84 | 429A8114 C,ELEC 25V 4.7UF | | 1 |
| CE71 | 429A8116 C,ELEC 25V 22UF | | 1 |

MODEL : CHASSIS PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|-------------------|----------|-------------------------|-----|
| *** PWB ASSYS *** | | | |
| PA04 | P1674001 | SYS/SEF/VLD PWB ASSY | 1 |
| PA05 | P1674001 | TIMER/IF PWB ASSY | 1 |
| PA06 | P1674001 | TIMER/FUNCTION PWB ASSY | 1 |
| PA23 | P1674001 | DIGITAL PWB ASSY | 1 |
| PA08 | P1674001 | LOGICAL ALDIO PWB ASSY | 1 |
| PA11 | P1674001 | SUP FUNCTION PWB ASSY | 1 |
| PA22 | P1674001 | VPS DECODER PWB ASSY | 1 |
| PA21 | P1674001 | OP SCREEN PWB ASSY | 1 |
| PA12 | P1674001 | PFE AMP PWB ASSY | 1 |
| PA18 | 79567401 | POWER/REG UNIT (DC-G-2) | 1 |

MODEL : MECHANICAL PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------------|----------|---------------------------|-----|
| *** MECHANICAL PARTS *** | | | |
| B003 | 16177871 | S. SOFT BRAKE ARM ASSY | 1 |
| B004 | 16177882 | TU.SOFT BRAKE ARM ASSY | 1 |
| B005 | 16177022 | LOADING UP ASSY | 1 |
| B006 | 16177932 | LOADING LOW ASSY | 1 |
| B007 | 16178003 | C.BRAKE ASSY | 1 |
| B010 | 16178062 | S.PFFL DISK ASSY | 1 |
| B012 | 16178223 | GUIDE ROLLER ASSY | 1 |
| B015 | 16178301 | EARTH PLATE S.A. | 1 |
| B016 | 16178302 | MOFF GEAR ASSY | 1 |
| B009 | 16179853 | RFFL DISK ASSY (2) | 1 |
| B071 | 16180351 | S-LOADINGPOST ASSY | 1 |
| B011 | 16180503 | IMPEDANCE ROLLER ASSY | 1 |
| B001 | 16180801 | R-ROLLER ASSY | 1 |
| B002 | 16182101 | TU SLANT RASE ASSMBLY | 1 |
| B002 | 16183562 | TENSION ARM ASSY(M2) | 1 |
| B013 | 16183551 | TENSION HAND ASSY(M2) | 1 |
| B014 | 16183561 | BRAKE ARM (R)ASSY(M2) | 1 |
| B091 | 16183571 | BRAKE ARM (L)ASSY(M2) | 1 |
| B092 | 16183591 | CONNECTED ARM ASSY | 1 |
| B094 | 16183591 | LOCK LEVER ASSY | 1 |
| B095 | 16183611 | S LINK ARM ASSY | 1 |
| B016 | 16183632 | S LINK ASSY | 1 |
| B066 | 16183642 | REVERSE ARM ASSY | 1 |
| B069 | 16183653 | PITCH ROLLER ARM ASSY(M2) | 1 |
| B073 | 16183671 | NCUF CAP ASSY(M2) | 1 |
| B093 | 16183921 | LCD HOLDER ASSY (M2) | 1 |
| B084 | 16184071 | BPAKE LINK ARM ASSY (DC) | 1 |
| B067 | 16184371 | R-DRIVE ASSY (M2) | 1 |
| B018 | 16184751 | PINCH-LINK ASSY | 1 |
| B019 | 16207641 | NUT | 4 |
| B020 | 16208001 | POLY SLIDER | 2 |
| B021 | 16208101 | CLAMPER | 1 |
| B022 | 16442101 | GUIDE ROLLER | 6 |
| B023 | 16442111 | GUIDE ROLLER HOLDER | 3 |
| B024 | 16442121 | GEAR (1) | 1 |
| B025 | 16442131 | GEAR (2) | 1 |
| B026 | 16442161 | DRIVE PELT | 1 |
| B027 | 16443362 | GEAR | 1 |
| B028 | 16444374 | G-F CAP | 1 |
| B098 | 16448741 | ACC CODE CRAMPER | 1 |
| B029 | 16534121 | COLLAP | 2 |
| B030 | 16534231 | FRANGE | 3 |
| B031 | 16534251 | COLLFP | 2 |
| B032 | 16534262 | PIK | 1 |
| B082 | 16534571 | TAPER FLANGE | 1 |

MODEL : MECHANICAL PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|---------------------------|-----|
| B035 | 16578922 | SPRING | 1 |
| B036 | 16578941 | SPRING | 1 |
| B037 | 16578972 | GUIDE PIN SPRING | 1 |
| B042 | 16579172 | SPRING | 1 |
| B068 | 16579261 | PINCH LINK SP.PLATE | 2 |
| B044 | 16579911 | SPRING (REV.ARM) | 1 |
| B087 | 16580681 | IMPEDANCE ROLLER SPRING(C | 1 |
| B041 | 16580762 | C.BRAKE SPRING (3) | 1 |
| P100 | 16582031 | BRAKE LINK(C2) | 1 |
| B101 | 16582041 | LINK RETURN SPRING | 1 |
| B102 | 16582051 | LOCK LEVER SPRING | 1 |
| B033 | 16582161 | TENSION SPRING(M2) | 1 |
| B104 | 16582201 | BRAKE LINK(C1) | 1 |
| B089 | 16582611 | IP SPRING NO.2(T) | 1 |
| B038 | 16582761 | S.SOFT FRAKE SPRING | 1 |
| B039 | 16582771 | TU.SOFT PRAVE SPRING | 1 |
| B090 | 16582931 | SPRING (T.A) | 1 |
| B047 | 16628731 | SPACER | 2 |
| B049 | 16629291 | SLIT WASHER | 1 |
| B051 | 16629412 | SLIT WASHER | 2 |
| B052 | 16629422 | SLIT WASHER | 3 |
| B050 | 16630591 | SLIT WASHER | 1 |
| P512 | 16875871 | SCREW S M3X5X15BF | 9 |
| | 16876781 | SCREW S M2.6X6X15BF | 3 |
| | 16877731 | SPECIAL SCREW | 3 |
| B504 | 16877741 | SCREW 2.6X8X15BF | 3 |
| B505 | 16877961 | SFT SCREW 2+2.7X35KF | 1 |
| B534 | 16878101 | SPECIAL SCREW | 4 |
| | 16878201 | SPECIAL SCREW | 2 |
| B072 | 18851001 | E.WASHER DIA 4 | 1 |
| B060 | 19516371 | WIRE CLAMPER-H | 1 |
| | 70780024 | FFC CABLE 1PP+45MM | 1 |
| | 79501111 | FF HEAD | 1 |
| | 79501153 | ACE HEAD ASSY(M2-MON02) | 1 |
| B055 | 79502074 | CAPSTAN MOTOR HHF-3106A | 1 |
| B061 | 824178W1 | MODE SENSOR SASSY | 1 |
| B058 | 82601F01 | S.SLANT RASE SASSY | 1 |
| B059 | 82601PC1 | TU.SLANT RASE SASSY | 1 |
| | 82601F01 | IP ROLLER SASSY | 1 |
| B108 | 82642ED1 | PINCH APM SASSY(M2) | 1 |
| B057 | 82642PJ1 | JUNCTION PWR SASSY | 1 |
| B506 | 82674AA1 | HEAD FROM SASSY(P/S-DEV2) | 1 |
| B088 | 91002331 | SCREW L-CPIMS*2.6*15BF | 2 |
| B078 | 92515AH1 | ROTARY DRUM S.A(PA/SE-2H) | 1 |
| | 16629251 | LOADING BELT | 1 |

MODEL : MECHANICAL PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|-------------------------|-----|
| B096 | 16286961 | WASHER D3.1 TO.5 | 1 |
| B095 | 16535261 | ACE ADJUST PLATE | 1 |
| B511 | 16875541 | SCREW M3*10*15BF | 3 |
| B510 | 16877711 | PL-CPIMS*2.6*5*15RF | 1 |
| B107 | 73200031 | CONNECTER TRG-P08X-A1 | 1 |
| B502 | 91003031 | SCREW PL-CPIMS*3*6*15RF | 3 |
| B508 | 91012011 | SCREW CPIMS*2*4*15BF | 1 |
| H501 | 91012361 | SCREW CPIMS*2.6*10*15RF | 3 |
| | 91112325 | SCREW CBBMS 2.6*5*3AF | 1 |

MODEL : SET PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--|-----------|---------------------------|-----|
| *** ELECTRICAL PARTS & MISCELLANEOUS PARTS *** | | | |
| A110 | 71129050 | JACK TERMINAL (1000G) | 1 |
| *** APPEARANCE PARTS *** | | | |
| A101 | 16183724 | CASSETTEHOUSING ASSY M2 | 1 |
| A001 | 16184351 | FRONT PANEL ASSY DX-1000G | 1 |
| A002 | 16375861 | TOP COVER | 1 |
| A107 | 16445602 | SLIDE HINGE | 2 |
| A102 | 16447131 | FRONT COVER DX-1000U | 1 |
| A103 | 16573831 | FRONT COVER SPRING | 1 |
| A003 | 16582361 | BOTTOM PLATE | 1 |
| A108 | 16631721 | INUSE COVER(3) | 1 |
| B532 | 16876431 | SCREW,PTF4X12X15Hf | 12 |
| B533 | 16878171 | SCREW (TOP) | 4 |
| B534 | 188E6201 | SPECIAL SCREW | 9 |
| A008 | 16184891 | PANEL DOOR ASSY | 1 |
| | 549910408 | SERVICE MANUAL DX-1000G | 1 |

MODEL : PACKING PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--|----------|---------------------------|-----|
| *** ELECTRICAL PARTS & MISCELLANEOUS PARTS *** | | | |
| K007 | 79550054 | IEC RF CABLE (1.2M) | 1 |
| | 79709463 | WIRELESS REMOTE RD-D1G | 1 |
| *** APPEARANCE PARTS *** | | | |
| K011 | 16830121 | PACKAGE | 1 |
| K009 | 16832952 | CUSHION(FRONT) | 1 |
| K010 | 16832961 | CUSHION(REAR) | 1 |
| K012 | 16833241 | CARTON BOX DX-1000G | 1 |
| *** PRINTED & PACKING MATERIALS *** | | | |
| K003 | 78816751 | INSTRUCTION BOOK DX-1000G | 1 |

MODEL : POWER REGULATOR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|---------------------|----------|---------------------------|-----|
| IC001 | 79VA0003 | IC M5237L UCZ0097ZZ | 1 |
| IC002 | 79VA0004 | IC PQ12R02 UC80028AZ | 1 |
| IC030 | 79VA0033 | IC M5237L UCZ0097ZZ | 1 |
| *** TRANSISTORS *** | | | |
| TR001 | 35520817 | TR, 2S8949 Q | 1 |
| TR002 | 35003516 | TR, 2SA733/733A P | 1 |
| TR003 | 35543519 | TR, 2SC2390 | 1 |
| TR005 | 79VA0005 | 2SD1266 UAD0090CZ | 1 |
| TR006 | 35170510 | TR, AA1A4M | 1 |
| TR007 | 79VA0006 | 2SD1286 UAD0089AZ | 1 |
| TR008 | 35541931 | TR, 2SC2785 (E, F, H, J) | 1 |
| TR009 | 35170505 | TR, AA1A4M | 1 |
| TR010 | 35920916 | TR, 2SB548 | 1 |
| TR011 | 79VA0080 | TR, AN1F4M | 1 |
| TR012 | 35924117 | TR, 2SB941 | 1 |
| *** DIODES *** | | | |
| D002 | 36107522 | RECTIFIER, SI ERA15-02 | 1 |
| D003 | 36107522 | RECTIFIER, SI ERA15-02 | 1 |
| D004 | 79VA0083 | DIODE 11E1 | 1 |
| D005 | 79VA0083 | DIODE 11E1 | 1 |
| D006 | 79VA0083 | DIODE 11E1 | 1 |
| D007 | 79VA0083 | DIODE 11E1 | 1 |
| D008 | 79VA0083 | DIODE 11E1 | 1 |
| D009 | 36003954 | DIODE 1S2076A | 1 |
| D010 | 36107522 | RECTIFIER, SI ERA15-02 | 1 |
| D011 | 36003954 | DIODE, IS2076A | 1 |
| D030 | 36003954 | DIODE, IS2076A | 1 |
| D031 | 79VA0083 | DIODE 11E1 | 1 |
| D032 | 79VA0083 | DIODE 11E1 | 1 |
| D033 | 79VA0083 | DIODE 11E1 | 1 |
| D034 | 79VA0083 | DIODE 11E1 | 1 |
| ZD002 | 36905204 | ZENER DIODE, RD20EB | 1 |
| ZD003 | 36905220 | ZENER DIODE, RD30EB | 1 |
| *** TRANSFORMER *** | | | |
| PT001 | 79VA0081 | TRANSFORMER NH1311 | 1 |
| SW001 | 79VA0071 | SF-W101W-01BB, PJC0136ZZ | 1 |
| *** SWITCH *** | | | |
| R003 | 79VA0008 | 1/4W2.2KJB(7.5) UEED222BA | 1 |
| R004 | 79VA0009 | RS1PC510HJS UEFD511BF | 1 |
| R006 | 79VA0010 | 1/4W33KGB(7.5) | 1 |
| R007 | 79VA0011 | 1/4W33KJB(7.5) | 1 |
| R008 | 79VA0012 | 1/4W0.22HK, S | 1 |
| R009 | 79VA0013 | 1W0.47HK, S | 1 |
| R010 | 79VA0014 | 1/4W2.7KJ, B(7.5) | 1 |
| R012 | 79VA0015 | 1/4W15KJ.B(7.5) UEED153BA | 1 |
| R013 | 79VA0016 | 1/4W220BJ, B(7.5) | 1 |

MODEL : JACK TERMINAL PWB ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|--------------------------------|-----|
| C901 | 43983306 | CE04COJ471 (NEW SS) | 1 |
| C902 | 430A8112 | CE04C1C470-5BSRA, AT | 1 |
| C903 | 430A8110 | CE04C1C220-5BSRA, AT | 1 |
| C904 | 430A8110 | CE04C1C220-5BSRA, AT | 1 |
| C905 | 430A8110 | CE04C1C220-5BSRA, AT | 1 |
| C906 | 430A8112 | CE04C1C470-5BSRA, AT | 1 |
| C907 | 430A8112 | CE04C1C470-5BSRA, AT | 1 |
| C908 | 430A8128 | CE04C1H010-5BSRA, AT | 1 |
| D901 | 380KA025 | DIODE 15S133, AT26 | 1 |
| IC901 | 37101250 | IC BA7026L | 1 |
| JK901 | 79V06321 | A/V CONNECTOR (21P) | 1 |
| L901 | 610G2775 | FILTER COIL L101J, BT ELEPK, A | 1 |
| L902 | 610G2775 | FILTER COIL L101J, BT ELEPK, A | 1 |
| MD901 | 34354028 | RF, MODULATOR (PAL, I 36) AL2 | 1 |
| R901 | 401KE673 | RD1/6PTY1.0KJ, AT26 | 1 |
| R902 | 401KE646 | RD1/6PTY75HJ, AT26 | 1 |
| R903 | 401KE685 | RD1/6PTY470HJ, AT26 | 1 |
| R904 | 401KE646 | RD1/6PTY75HJ, AT26 | 1 |
| R905 | 401KE673 | RD1/6PTY1.0KJ, AT26 | 1 |
| R906 | 401KE673 | RD1/6PTY1.0KJ, AT26 | 1 |
| TR901 | 35902912 | TRANSISTOR 25A 952 L | 1 |
| LPF901 | 69699005 | DS310-558271 | 1 |
| LPF902 | 69699005 | DS310-558271 | 1 |
| C909 | 42319100 | CC45SL1H391J, B | 1 |
| C910 | 42311100 | CC45SL1H391J, B | 1 |

MODEL : CASSETTE HOUSING ASSEMBLY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------|----------|------------------------------|-----|
| A301 | 16441731 | LOADING BELT | 1 |
| A302 | 35290301 | PHOTO TR PT361 | 2 |
| A303 | 65330045 | TACT SWITCH | 2 |
| A304 | 79502029 | DC MICRO MOTOR RF-280R-10350 | 1 |
| A305 | 67012026 | CASSETTE HOUSE LAMP | 1 |
| A306 | 16582271 | MIRROR | 1 |
| B070 | 65907089 | REC SAFETY SW | 1 |

MODEL : POWER REGULATOR ASSY

| SYMBOL | PARTS NO | DESCRIPTION | QTY |
|--------------------|-----------|----------------------------|-----|
| R014 | 79VA0017 | 1/4W1.2KJ, B(7.5) | 1 |
| R015 | 79VA0018 | 1/4W10KJ, B(7.5) | 1 |
| R017 | 79VA0011 | 1/4W4.3KG, B(7.5) | 1 |
| R018 | 79VA0019 | 1/4W680HJ, B(7.5) | 1 |
| R020 | 79VA0020 | 1/4W22KJ, B(7.5) | 1 |
| R021 | 79VA0015 | 1/4W15KJ, B(7.5) UEEB153BA | 1 |
| R023 | 79VA0016 | 1/4W220BJ, B(7.5) | 1 |
| R031 | 79VA0082 | RD1/4WPTY8.2KGB (7.5) | 1 |
| R032 | 79VA0019 | 1/4W680HJ, B(7.5) | 1 |
| R033 | 79VA0011 | 1/4W33KJ, B(7.5) | 1 |
| R034 | 79VA0011 | 1/4W33KJ, B(7.5) | 1 |
| L091 | 79VA0076 | CHOKECOIL FKOB160MH15 | 1 |
| *** CAPACITORS *** | | | |
| C002 | 79VA0079 | CE04WIC472MA | 1 |
| C003 | 79VA0021 | CE04W1J101MA UGAG101BU | 1 |
| C004 | 43026041 | CE04W1E470MA | 1 |
| C005 | 79VA0084 | CE04W1V222MA | 1 |
| C006 | 42976509 | CG92V1H472J, A | 1 |
| C007 | 43026048 | CE04W1E332MA | 1 |
| C008 | 43026028 | CE04JC470MA | 1 |
| C009 | 43026045 | CE04W1E471MA UGAJ1ROBU | 1 |
| C010 | 79VA0022 | CE04W2A010MA UGAJ1ROBU | 1 |
| C011 | 42311045 | CC45SL1H101J, B | 1 |
| C012 | 79VA0023 | CE04W2A101MA UGAJ101BU | 1 |
| C013 | 79VA0063 | CE04W1H010MA UGAF1ROBU | 1 |
| C015 | 42976525 | CG92V1H104J, A | 1 |
| C016 | 79VA0022 | CE04W2A010MA UGAJ1ROBU | 1 |
| C017 | 43026054 | CE04W1V101MA UGAJ1ROBU | 1 |
| C021 | 79VA0022 | CE04W2A010MA UGAJ1ROBU | 1 |
| C022 | 79VA0069 | CE04W2A470MA UGAJ470BU | 1 |
| C023 | 79VA0022 | CE04W2A010MA UGAJ1ROBU | 1 |
| C091 | 79BA0074 | 0.1μF UG20326Z | 1 |
| PC001 | 79VA0075 | POWER SUPPLY CORD 1EC | 1 |
| | EHS0291ZZ | WIRE CLAMPER #2104 | 1 |
| | 18292501 | | |